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Appendix U: Wetland Delineation Report

Coastal Virginia Offshore Wind Commercial Project

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ACRONYMS AND ABBREVIATIONS

1987 Manual	Corps of Engineers Wetland Delineation Manual
CVOW	Coastal Virginia Offshore Wind
Dominion Energy	Dominion Energy Services, Inc.
GIS	geographic information systems
HGM	hydrogeomorphic
HUC	Hydrologic Unit Code
LiDAR	Light Detection and Ranging
NHD	National Hydrography Dataset
NJD	non-jurisdictional
NRCS	Natural Resources Conservation Service
NRPW	Non-Relatively Permanent Waters
NWI	National Wetlands Inventory
NWPR	2020 Navigable Waters Protection Rule
OHWM	ordinary high-water mark
PEM	palustrine emergent
PFO	palustrine forested
Project	Coastal Virginia Offshore Wind Commercial Project
PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0
RPW	Relatively Permanent Waters
Study Area	Area within the limits of disturbance of the onshore components of the Coastal Virginia Offshore Wind Commercial Project that were accessible and surveyed for aquatic resources
Tetra Tech	Tetra Tech, Inc.
TNW	Traditionally Navigable Water
UPL	Upland
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VDEQ	Virginia Department of Environmental Quality

U.1 INTRODUCTION

The Virginia Electric and Power Company, doing busines as Dominion Energy Services, Inc. (Dominion Energy), is proposing to construct, own, and operate the Coastal Virginia Offshore Wind (CVOW) Commercial Project (Project). The Project will be located in the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf Offshore Virginia (Lease No. OCS-A-0483). The Offshore Project Components, including the Offshore Substations, Inter-Array Cables, and Wind Turbine Generators, will be located in federal waters in the Lease Area, while the Offshore Export Cable Route Corridor will traverse both federal and state territorial waters of Virginia.

The Onshore Project Components, including the Cable Landing Location, Onshore Export Cables, Switching Station, Interconnection Cables, and Onshore Substation, will be located in the area of Hampton Roads, Virginia (Figure U-1). The Cable Landing Location in Virginia Beach is proposed for development in an existing developed parcel within the State Military Reservation. The Onshore Export Cables that will transport the power from the Cable Landing Location to a Common Location north of Harpers Road where the Interconnection Cable Route begins. The Interconnection Cables will transmit and transport the power from Harpers Road to the Onshore Substation, which would be the final Point of Interconnection into the existing electrical grid. The Switching Station, which is proposed to be constructed either north of Harpers Road (preferred) or north of Princess Anne Road, in Virginia Beach, Virginia, will collect power and facilitate transition from underground transmission line to overhead transmission line for delivery to the Onshore Substation at the existing Dominion Energy Fentress Substation, located in Chesapeake, Virginia. General routing is referenced on the U.S. Geological Survey (USGS) Project Location Map (Figure U-1). The Project is located in the following watershed areas: Rudee Inlet-Atlantic Ocean (Hydrologic Unit Code [HUC] 020403040501), Asheville Bridge Creek (HUC 030102051301), West Neck Creek (HUC 030102051203), 030102051202—Upper North Landing River, 030102051201—Chesapeake Canal, and 030102051204—Pocaty Creek (USGS 2020).

Tetra Tech, Inc. (Tetra Tech), on behalf of Dominion Energy, prepared this Wetland Delineation Report summarizing the results of field surveys to identify and delineate wetlands and surface water features within accessible portions of the preferred route within the Onshore Project Area (or Study Area). The width/size of the Study Area was determined based on the design limits of disturbance, incorporating the greatest potential extent of impact within the Onshore Project Components (Cable Landing Location, Onshore Export Cable Route, Switching Station, Interconnection Cable Route and Substaiton.). The results described herein do not cover the entire Study Area because not all parcels could be surveyed due to access constraints. However, this report will be amended as access to more parcels and properties is obtained and additional areas are delineated.

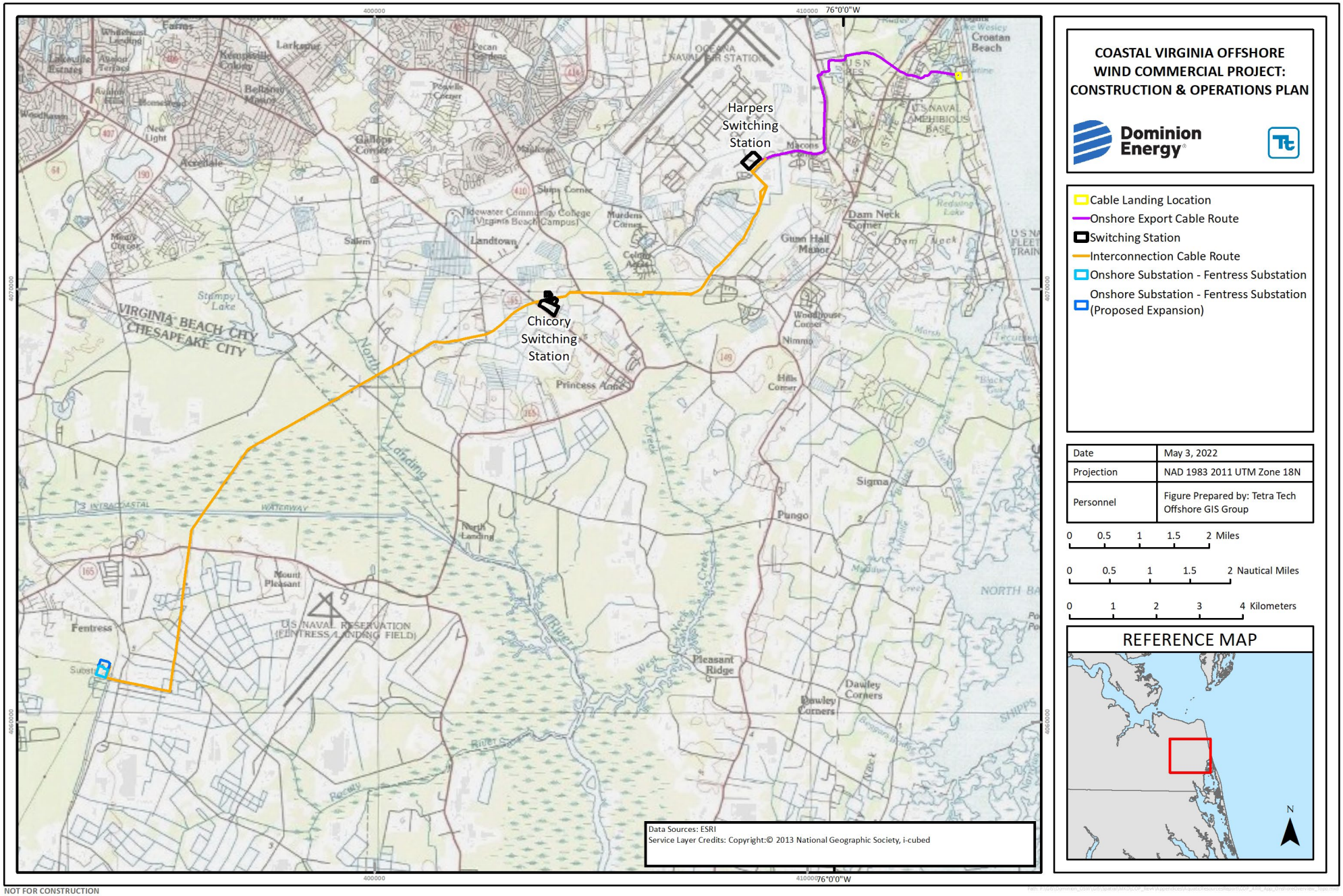

Figure U-1. USGS Project Location Map

U.2 METHODS

The primary objective of the aquatic resource field survey was to identify and map potentially jurisdictional streams and wetlands for Project permitting. However, for planning purposes, the survey also included the identification and mapping of likely non-jurisdictional (NJD) aquatic resources such as stormwater management features (e.g., stormwater retention ponds, ditches excavated wholly in, and draining only uplands that do not carry a relatively permanent flow), drainage features, groundwater wells with surface access, water-filled depressions created incidental to construction activity, and wet areas that are not tributaries or open waters that do not meet the regulatory definition of "wetlands" per the Navigable Waters Protection Rule (NWPR; USACE and EPA 2020). As of August 30, 2021, the NWPR has been vacated and remanded per guidance from the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers (USACE; EPA 2021). As such, while these features were mapped under general guidance from the NWPR (as well as guidance regarding State Water Determinations by the Virginia Department of Environmental Quality [VDEQ]), modifications to mapping methodology will be made as needed in accordance with the most up-to-date regulatory guidance provided by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency.

U.1.1 Background Research

Prior to the start of field surveys, an initial desktop analysis of the Study Area was conducted through review of available geographic information systems (GIS) resources. Information reviewed included the following:

- USGS topographic mapping (Figure U-1; National Geographic Society, i-cubed 2013),
- Natural Resources Conservation Service (NRCS) Web Soil Survey (Figure U-2; NRCS 2019) mapping and data,
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (Figure U-3; USFWS 2021),
- USGS National Hydrography Dataset (NHD) (Figure U-4; USGS 2020), and
- Virginia Geographic Information Network Light Detection and Ranging (LiDAR; Aerial mapping support; VGIN 2016).

In addition, existing aquatic resource information for areas overlapping the Study Area was reviewed. These include wetland delineation reports and existing jurisdictional determinations that were developed for activities that overlap the Study Area but are unrelated to the Project. This supplemental wetland information is provided in Attachment U-1.

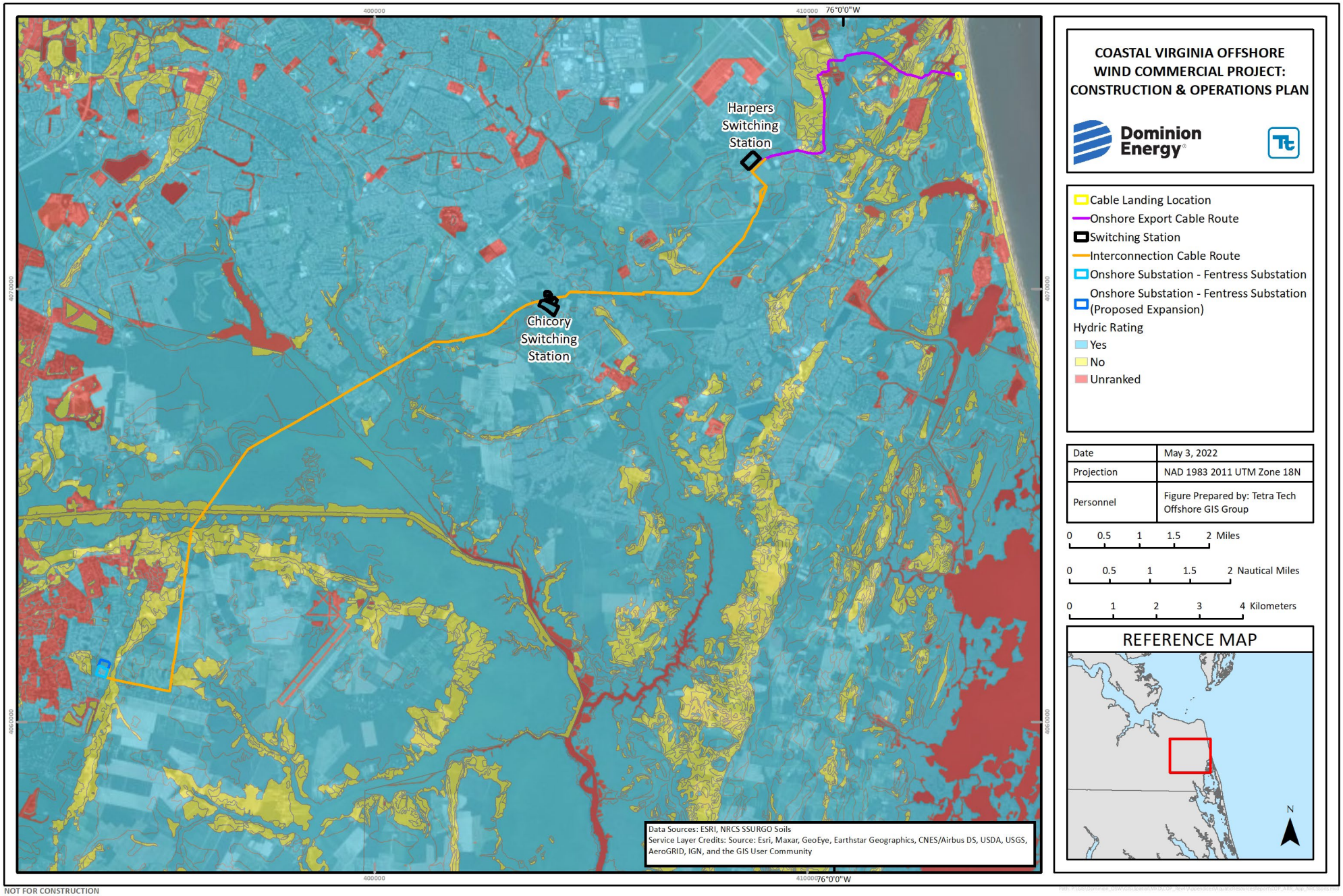

Figure U-2. NRCS Soils Map

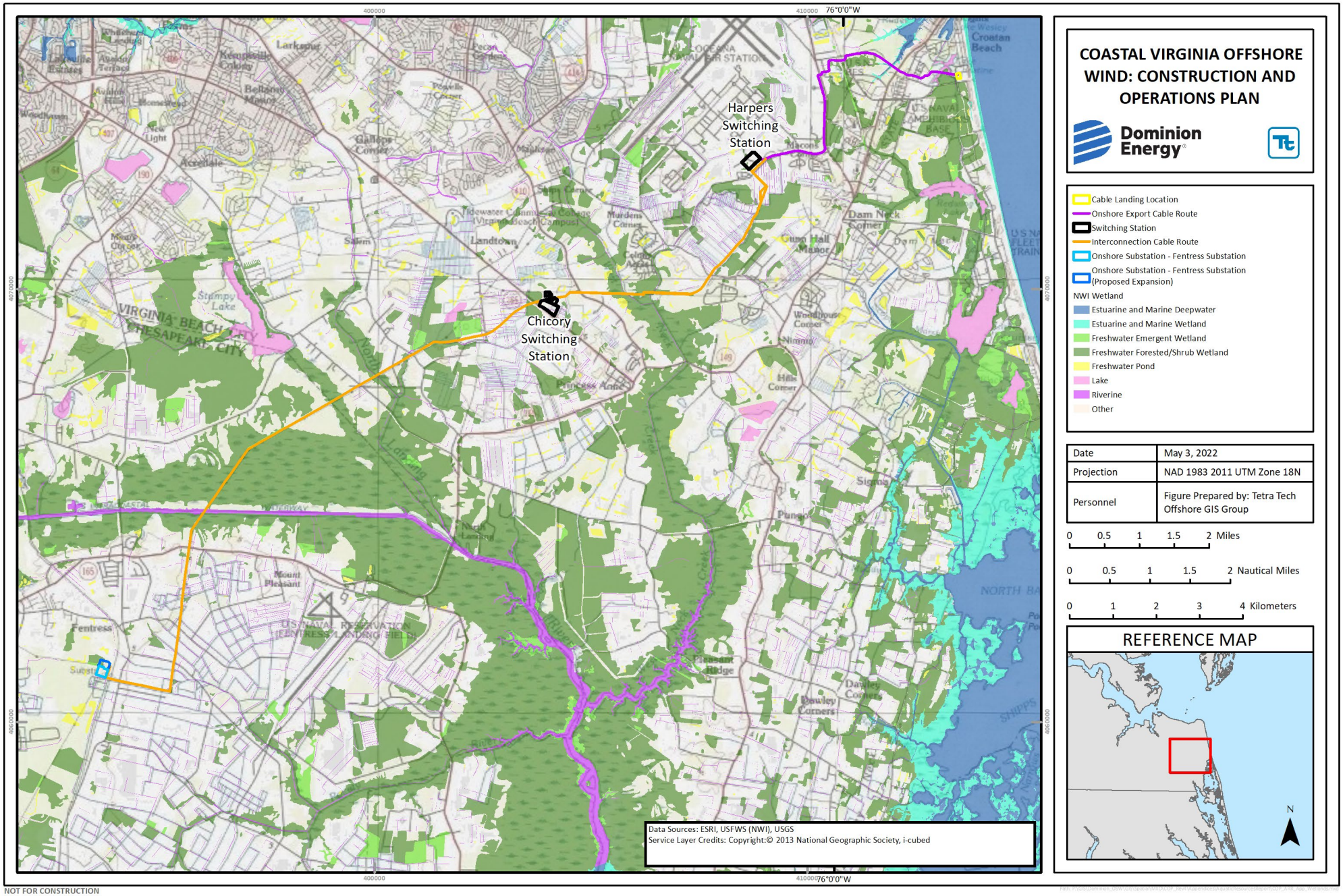

Figure U-3. NWI Wetlands Map

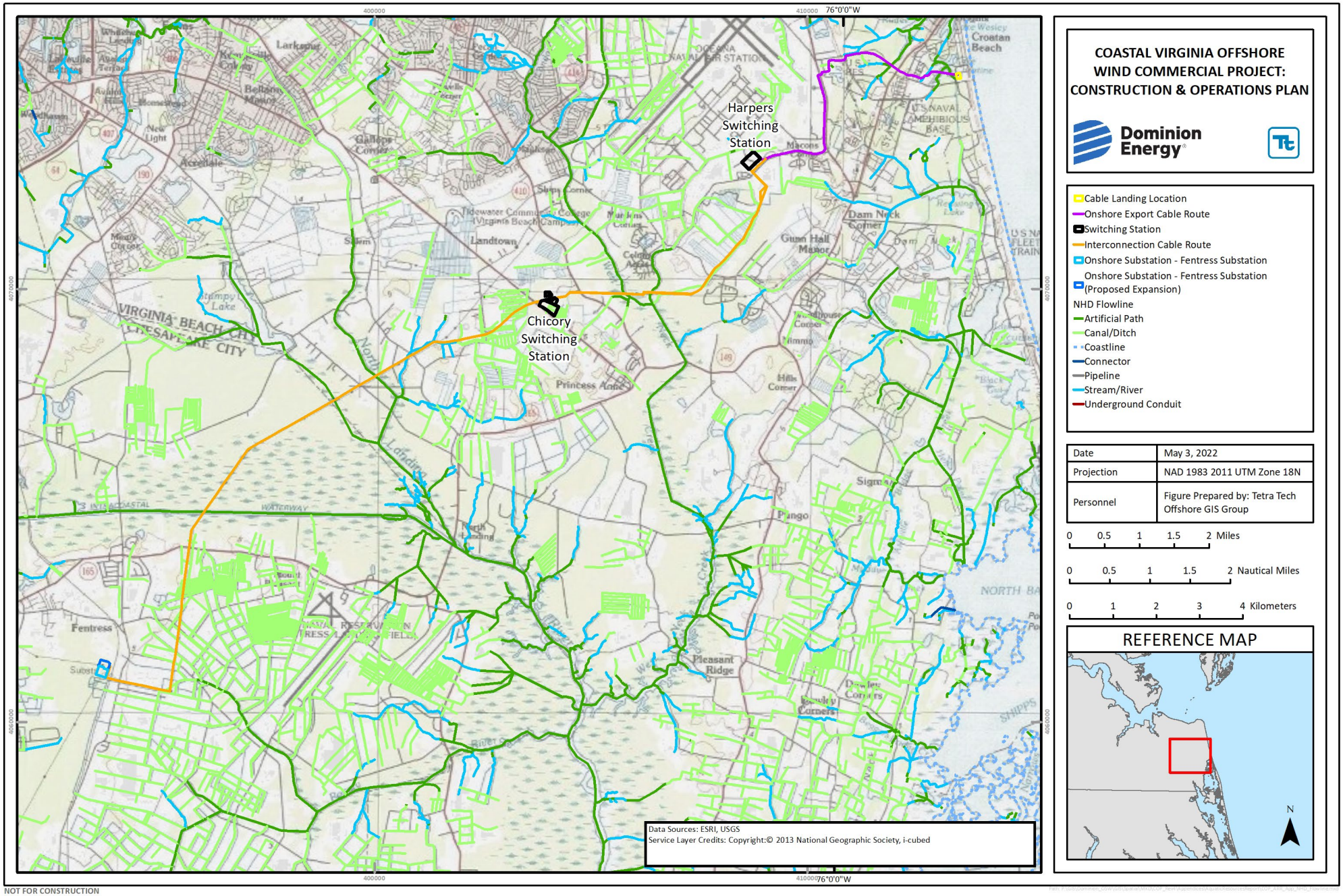

Figure U-4. NHD Streams Map

U.1.2 Stream Identification

Potentially jurisdictional streams and drainage ditches were identified in the field by the presence of a continuous channel that exhibits evidence of frequent or reoccurring water flow such as a defined bed, bank, and an ordinary high-water mark (OHWM; USACE and EPA 2007). Identified stream reaches were mapped along their entire course within the Study Area by use of a global positioning system receiver with sub-meter accuracy or better. In addition, the USGS NHD stream name (USGS 2020) for each identified stream was recorded; mapped streams lacking an NHD identification were named "Unnamed Tributary" of the first named receiving waterbody.

Physical and biological characteristics of the identified streams were evaluated to determine Flow Regime (82 Federal Register 1860, January 6, 2017), USACE waters type (USACE and EPA 2007), and Cowardin classifications (Cowardin et al. 1979). Physical characteristics evaluated include, but are not limited to, channel morphology, substrate size and type, and base flow conditions. Biological characteristics evaluated include, but are not limited to, the presence of fish, aquatic macroinvertebrates, and vegetation rooted within the OHWM. Water types defined by USACE (USACE and EPA 2007) include:

- *Traditional Navigable Water (TNW)* – All "navigable waters of the U.S.," defined in 33 Code of Federal Regulations Part 329 and by numerous decisions of the federal courts, plus all other waters that are navigable-in-fact.
- *Relatively Permanent Waters (RPW)* – Streams that flow directly or indirectly into TNWs and where the flow of water is continuous year-round or at least seasonally.
- *Non-Relatively Permanent Waters (NRPW)* – Streams that flow directly or indirectly into TNWs where the flow of water is not continuous at least seasonally.

Flow Regimes (82 Federal Register 1860, January 6, 2017) include:

- *Perennial* – Streams that typically have flow year-round. Most of the hydrology for perennial streams is derived from smaller upstream waters and/or groundwater sources with precipitation as a supplemental hydrologic contributor. Perennial streams are classified as RPW or TNW USACE waters types (USACE and EPA 2007).
- *Intermittent* – Streams with seasonal flow, typically during the wet season (winter through spring). At least a portion of the hydrology for intermittent streams is derived from groundwater sources with precipitation as a supplemental hydrologic contributor. Intermittent streams are classified as an RPW USACE waters type (USACE and EPA 2007).
- *Ephemeral* – Rain-dependent streams flowing only after precipitation events. Precipitation-driven run-off from the localized surrounding landscape is the primary source of hydrology. Ephemeral streams are different from non-jurisdictional ditches and drainages due to the presence of an observable OHWM. Ephemeral streams are classified as an NRPW USACE waters type (USACE and EPA 2007).

U.1.3 Wetland Delineation

Wetlands were delineated based on the identification of hydrophytic vegetation, hydric soils, and wetland hydrology indicators, in accordance with the procedures specified in the USACE *Corps of Engineers*

Wetland Delineation Manual (1987 Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Regional Supplement; USACE 2010). Wetland boundaries were mapped in the field using a global positioning system receiver, and supplemented when necessary by aerial interpretation where access was not possible (e.g., Gum Swamp). Wetlands that continued beyond the Study Area boundary were recorded as open boundary systems while those that do not were recorded as closed systems. Data collected on vegetation, soils, and hydrology for identified wetlands and their associated upland points were recorded on USACE Wetland Determination Data Forms, and photographs of each identified wetland were collected.

According to the 1987 Manual, an area is defined as a wetland if, under normal circumstances, it meets all three of the following criteria: predominance of hydrophytic vegetation (plants adapted for life in saturated soil conditions); hydric soils (soils formed under water, or in saturated conditions); and wetland hydrology (current or recent inundation or saturated soils at some time during the growing season).

U.1.1.1 Hydrophytic Vegetation

Hydrophytic vegetation was identified in the field based on protocol outlined in the Regional Supplement (USACE 2010). Plant species representative of the habitats within the Study Area were identified to the species' taxonomic level, and the indicator status for each plant species was identified using *The National Wetland Plant List: 2018 Wetland Ratings* (USACE 2018). Wetland indicator statuses are described below (Reed 1988):

- *Obligate* – almost always occurs in wetlands; estimated probability of occurrence in a wetland is greater than 99 percent.
- *Facultative Wetland* – usually occurs in wetlands but may occur in non-wetlands; estimated probability of occurrence in a wetland is 67 to 99 percent.
- *Facultative* – equally likely to occur in wetlands and non-wetlands; estimated probability of occurrence in a wetland is 34 to 66 percent.
- *Facultative Upland* – usually occurs in non-wetlands but may occur in wetlands; estimated probability of occurrence in a wetland is 1 to 33 percent.
- *Upland (UPL)* – rarely occurs in wetlands; estimated probability of occurrence in a wetland is less than 1 percent.

Hydrophytic vegetation includes species with an indicator status of Obligate, Facultative Wetland, or Facultative. Hydrophytic vegetation decisions were based on the plant community typically present during the wet portion of the growing season during a normal rainfall year. In areas where human practices or natural events have influenced vegetation, procedures for difficult or problematic situations outlined in the Regional Supplement (USACE 2012) are followed.

Wetland types are based on vegetation strata composition and are classified in accordance with the following from USFWS's *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979):

- *Palustrine emergent (PEM)* – contain emergent, herbaceous (non-woody) plants which are the tallest life form with at least 30 percent aerial coverage.

- *Palustrine scrub-shrub (PSS)* – contain woody plants less than 6 meters (m; 20 feet [ft]) in height, which are the tallest life form with at least 30 percent aerial coverage, or, when trees or shrubs alone cover less than 30 percent of an area, but in combination, cover 30 percent or more. Trees are defined as woody plants at least 6 m (20 ft) in height, and shrubs are defined as woody plants less than 6 m (20 ft) in height.
- *Palustrine forested (PFO)* – contain woody plants at least 6 m (20 ft) in height, which are the tallest life form with at least 30 percent aerial coverage.
- *Palustrine unconsolidated bottom (PUB)* – contain all wetland and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover of less than 30 percent.

U.1.1.2 Hydric Soils

Hydric soils were identified in the field based on protocol outlined in the 1987 Manual *(*Environmental Laboratory 1987*)*, Regional Supplement (USACE 2012), and *Field Indicators of Hydric Soils in the United States* (USDA 2010). Based on prior experience, the presence of field-identified hydric soils does not always align with NRCS-mapped hydric soils units. The NRCS soil units represent a large geographic area and are based on broad geologic and historic conditions. Generally, the methods described in the *Field Indicators of Hydric Soils in the United States* (USDA 2010) are applied to determine hydric soil conditions on a localized scale. A review of the NRCS-mapped hydric soils units was completed during the desktop analysis to identify areas with the potential to contain wetlands (see Figure U-2); however, the field-delineated wetland boundaries were mapped based on the presence of field-identified hydric soils. In cases where soils are found to be disturbed or problematic, determinations relied on the NRCS-mapped hydric soil units (USACE 2012).

U.1.1.3 Wetland Hydrology

Wetland hydrology indicators were identified in the field based on protocol outlined in the 1987 Manual (Environmental Laboratory 1987) and Regional Supplement (USACE 2012). Hydrogeomorphic (HGM) and water type classifications were assigned to wetlands based on their hydrologic source and connectivity to streams. HGM classifications are based on *A Hydrogeomorphic Classification for Wetlands* (Brinson 1993); a summary of HGM classifications commonly used in the Project region is provided below:

- *Riverine* – Wetlands occur in floodplains and riparian corridors in association with stream channels.
- *Depressional* – Wetlands occur in topographic depressions. Dominant water sources are precipitation and ground water discharge, and both interflow and overland flow from adjacent uplands.
- *Slope* – Wetlands normally are found where there is a discharge of ground water to the land surface. They normally occur on sloping land; elevation gradients may range from steep hillsides to slight slopes.

Wetland USACE water types (USACE and EPA 2007) include:

- *TNWW* – wetlands adjacent to TNWs,
- *RPWWD* – wetlands directly abutting RPWs that flow directly or indirectly into TNWs,

- *RPWWN* – wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs,
- *NRPWW* – wetlands adjacent to NRPWs that flow directly or indirectly into TNWs, and
- *Isolate* – isolated (interstate or intrastate) waters, including isolated wetlands.

Visible wetland hydrology indicators, inundation/saturation visible on aerial imagery, and estimates of the effects of ditches and subsurface drainage systems were all considered when making decisions regarding the presence/absence of wetland hydrology in areas where human practices or natural events may have altered conditions.

U.3 RESULTS

Tetra Tech performed aquatic resources surveys for the onshore components of the Project in 2021 and 2022, completing delineations in 60 percent of the Study Area. The field surveys identified 15 stream reaches, 35 wetlands, 3 potentially jurisdictional ditches, and 67 non-jurisdictional ditches within the surveyed portion of the Study Area, referenced in the Aquatic Resource Location Mapbook (Attachment U-2). An additional two stream reaches (JC_S_001 and JC_S_003) were delineated via aerial imagery and LiDAR, as they were physically inaccessible in the field. The number of identified features will increase as more areas of the limits of disturbance become available for physical survey.

This Wetland Delineation Report represents our best professional judgment and is based on site conditions at the time of the field survey. However, final authority over determinations made during these surveys rests with the VDEQ and USACE.

U.1.4 Stream Identification

Fifteen stream reaches and three potentially jurisdictional ditches (EF_D_002, EF_D_004, and EF_D_013) exhibiting intermittent flow regime were identified in the Study Area based on review of available GIS mapping data, evidence collected during field surveys, and best professional judgment. Attachment U-3, Table U-3-1 provides information for each identified stream reach or jurisdictional ditch, including field identification name, stream location, flow regime classification, water type classification, Cowardin classification, flow direction, and top of bank width. Stream data forms are provided in Attachment U-4 for each stream reach or jurisdictional ditch that was physically surveyed; photographs of each identified stream reach or jurisdictional ditch are included immediately following each feature's respective stream data form. In circumstances where parcels were inaccessible (i.e., inundated areas presenting a health and safety hazard for staff completing physical surveys) but had been approved for access, features were mapped aerially from LiDAR and imagery. These features are characterized by available desktop data (see Attachment U-3, Table U-3-1) but do not have corresponding data forms or photographs. These features include JC_S_001 and JC_S_003.

U.1.5 Wetland Delineation

Thirty-five wetlands were delineated within the Study Area (60 percent of Study Area) based on review of available GIS mapping data, evidence collected during field surveys, and best professional judgment. A review of the USFWS NWI mapping indicates that 101 NWI wetlands are mapped across the entire Study

Area (Figure U-3). Generally, NWI features that were mapped within the Study Area during desktop review were confirmed during field surveys. However, it should be noted that comparison between field surveyed wetlands and NWI shows variation by extent, size, and Cowardin classification.

Attachment U-3, Table U-3-2 provides a summary of each wetland identified, including wetland identification name, location, Cowardin classification, HGM classification, waters type classification, the identity of any associated (i.e., abutting or adjacent) waterbodies, wetland size within the Study Area (in acres and square feet), and whether the wetland boundary is open or closed (see Section U.2.1). The wetland size provided in Attachment U-3, Table U-3-2 represents the size of the delineated wetland boundary shown on Attachment U-2. Open boundary wetlands continue beyond the mapped boundary; therefore, the total wetland size (including outside the Study Area) may be larger than the size provided in Attachment U-3, Table U-3-2.

The USACE Wetland Determination Data Forms detailing the existing vegetation, soil characteristics, and hydrology for each physically surveyed wetland and its associated upland point are provided in Attachment U-5. Photographs and photograph location maps of each identified wetland are included immediately following each feature's respective USACE Wetland Determination Data Form. In circumstances where parcels were inaccessible (i.e., inundated areas presenting a health and safety hazard for staff completing physical surveys) but had been approved for access, features were mapped aerially from LiDAR and imagery. These features are characterized by available desktop data (see Attachment U-3, Table U-3-2) but do not have corresponding data forms or photographs.

U.1.6 Non-Jurisdictional Aquatic Feature Identification

Sixty-seven NJD aquatic features were identified in the Study Area based on review of applicable regulations, available GIS mapping data, evidence collected during field surveys, and best professional judgment. The NJD aquatic features were predominantly categorized as agricultural ditches constructed within upland fields and roadside drainage features utilized for stormwater management. All of these ditches exhibited ephemeral flow, or were dry at the time of survey. The majority of these ditches were observed as lacking a contiguous and well-defined OHWM or a contiguous and well-defined bed and bank, or they contained upland vegetation within the wetted thalweg.

The Aquatic Resource Location Mapbook (Attachment U-2) illustrates the NJD aquatic feature locations in relation to the Study Area. Attachment U-3, Table U-3-3 summarizes NJD aquatic feature information.

U.4 CONCLUSION

During the onshore field aquatic resources survey of the Project, 15 stream reaches, 35 wetlands, 3 potentially jurisdictional ditches, and 67 NJD aquatic features were identified and mapped within the Study Area. Summaries of identified stream reaches and wetland data are provided in Attachment U-3, Tables U-3-1 and U-3-2, and locations of all streams, wetlands, and NJD aquatic features are shown on the Aquatic Resource Location Map (Attachment U-2).

This Wetland Delineation Report represents our best professional judgment and is based on site conditions at the time of the field survey. However, final authority over the determinations made during this survey rests with the VDEQ and the USACE.

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ATTACHMENT U-1: SUPPLEMENTAL DELINEATIONS AND CONCURRENT JURISDICTIONAL DETERMINATIONS

Stantec Consulting Services Inc.
5209 Center Street, Williamsburg, Virginia 23188-2680

March 5, 2018 ; Revised June 15, 2018
File: 203400975

Attention: Regulator of the Day
U.S. Army Corps of Engineers
803 Front Street
Norfolk, Virginia 23510
Via Email: CENAO.REG_ROD@usace.army.mil

Dear Regulator of the Day:

Reference: **Request for Preliminary Jurisdictional Determination**
2017 SMR Camp Pendleton Wetland Delineation, Virginia Beach, Virginia
Latitude: 36.816431° Longitude: -75.97849°

Applicant: Mr. Ken Oristaglio
Commonwealth of Virginia Department of Military Affairs
Building 316 Fort Pickett
Blackstone, Virginia 23824-6316

Stantec Consulting Services, Inc. (Stantec) has been retained by the Commonwealth of Virginia Department of Military Affairs (VDMA), to conduct a detailed investigation of waters of the U.S., including wetlands (WOUS), on the above-referenced project. The approximate 332.01-acre study area is located within the Lake Christine, Lake Rudee, and Atlantic Ocean drainage basins in Virginia Beach, Virginia (Figure 1). The site is situated south of Rudee Inlet, north of South Birdneck Road, west of General Booth Boulevard, and can be accessed from General Booth Boulevard (via the Virginia Aquarium and Marine Science Center overflow parking lot) (Figure 2). A copy of the Pre-Application and/or Jurisdictional Waters Determination Request Form is provided in Appendix A.

It should be noted that Stantec previously conducted detailed delineations of WOUS within portions of the SMR Camp Pendleton. Specifically, Stantec delineated an area immediately around and including Lake Christine (Lake Christine Water Quality Study and Dredging Plan). The Corps confirmed the delineation on September 23, 2013 (NAO-2013-1616). Additional study area was added and delineated in association with the Lake Christine delineation and was confirmed on March 12, 2015 under the same Corps project number.

Off-site Evaluation

Prior to conducting fieldwork, Stantec consulted the U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map for Virginia Beach, Virginia (1986 revision), the National Wetlands Inventory (NWI), administered by the U.S. Fish and Wildlife Service (USFWS), and the SSURGO Soil Survey, administered by the Natural Resources Conservation Service (NRCS). The USGS quad map depicts a partially forested site on nearly level terrain. Lake Christine bisects the central portion of

Reference: 2017 SMR Camp Pendleton Wetland Delineation

the project area and the Atlantic Ocean is located immediately to the east. Within the project limits, the NWI map (Figure 3) depicts freshwater emergent wetlands, freshwater forest/shrub wetlands, and freshwater lake associated with Lake Christine. The soil survey (Figure 4) indicates that the site is underlain primarily by Acredale silt loam, Augusta loam, Chapanoke silt loam, Duckston fine sand, Tetotum loam, Tomotley loam, Udorthents, loamy, and Urban land. Of these soil types, Acredale silt loam, Duckston fine sand, and Tomotley loam are classified as hydric by the NRCS in Virginia Beach, Virginia.

On-site Evaluation

Fieldwork was conducted during August and October 2017 using the Routine Determination Method as outlined in the 1987 *Corps of Engineers Wetland Delineation Manual* and methods described in the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0)*. Wetland flags were placed in the field by Stantec and sequentially numbered to provide an on-site record of the delineation. The data sheets (Appendix B) used in this investigation are attached along with the Delineation Map (Figure 5) showing the GPS-located limits of wetlands and other water features, previously confirmed WOUS limits, as well as data point locations.

Site Description

Jurisdictional features identified by Stantec within the project limits may be classified as palustrine forested, scrub shrub, and emergent wetlands; tidal emergent wetlands; perennial and intermittent stream channels; jurisdictional ditches, as well as open water associated with Lake Christine. Wetland vegetation is typified by red maple (*Acer rubrum*), groundsel tree (*Baccharis halimifolia*), American hornbeam (*Carpinus caroliniana)*, coastal sweetpepperbush (*Clethra alnifolia*), wax myrtle (*Morella cerifiera)*, willow oak (*Quercus phellos*), highbush blueberry (*Vaccinium corymbosum*), southern lady fern (*Athyrium asplenioides*), smallspike false nettle (*Boehmeria cylindrica*), cypress panicgrass (*Dichanthelium dichotomum*), common rush (*Juncus effusus*), sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*), dallisgrass (*Paspalum dilatatum*), and netted chainfern (*Woodwardia areolata*). The transition from wetland to upland is generally identified by a shift in the vegetative community and a loss of surficial indicators of hydrology. Table 1 shows the dimensions of the identified jurisdictional resources within the 2017 SMR Camp Pendleton Wetland Delineation study area and do not include the previously confirmed WOUS limits.

Table 1. Wetlands and WOUS Calculations

E2EM (Acres)	**PFO** (Acres)	**PSS** (Acres)	**PEM** (Acres)	**Upper Perennnial Stream Channels (R3)** Acres (LF)	**Intermittent Stream Channels (R4)** Acres (LF)	**Jurisdictional Ditches (R4)** Acres (LF)
0.40	13.22	0.29	2.05	0.01 (244)	0.02 (272)	0.08 (1,757)

Reference: 2017 SMR Camp Pendleton Wetland Delineation

Table 2 shows the dimensions of wetlands and other waters of the U.S. from the 2017 SMR Camp Pendleton Wetland Delineation combined with the previously confirmed limits of WOUS associated with the Lake Christine Water Quality Study and Dredging Plan.

Table 2. Combined Wetlands and WOUS Calculations

Wetlands (Acres)	**Upper Perennial Stream Channels (R3)** Acres (LF)	**Intermittent Stream Channels (R4)** Acres (LF)	**Jurisdictional Ditches (R4)** Acres (LF)	**Open Waters** (Acres)
20.46	0.01 (244)	0.02 (272)	0.23 (2,729)	18.42

On behalf of our client, Stantec respectfully requests that the Corps confirm our delineation of the 2017 SMR Camp Pendleton Wetland Delineation and re-confirm the WOUS included in the Lake Christine Water Quality Study and Dredging Plan. We would appreciate the opportunity to meet with you on site to present our fieldwork. Please call to set up a meeting date or to discuss any questions regarding our investigation.

Thank you for your cooperation in this matter.

Regards,

Stantec Consulting Services

Kenrick Presgraves, PWD
Senior Ecologist
Phone: (757) 220 -6869
Fax: (757) 229-4507
kenny.presgraves@stantec.com

Enclosures: Figures 1, 2, 3, 4, and 5
Appendices A and B

cc. Mr. Ken Oristaglio – Virginia Department of Military Affairs

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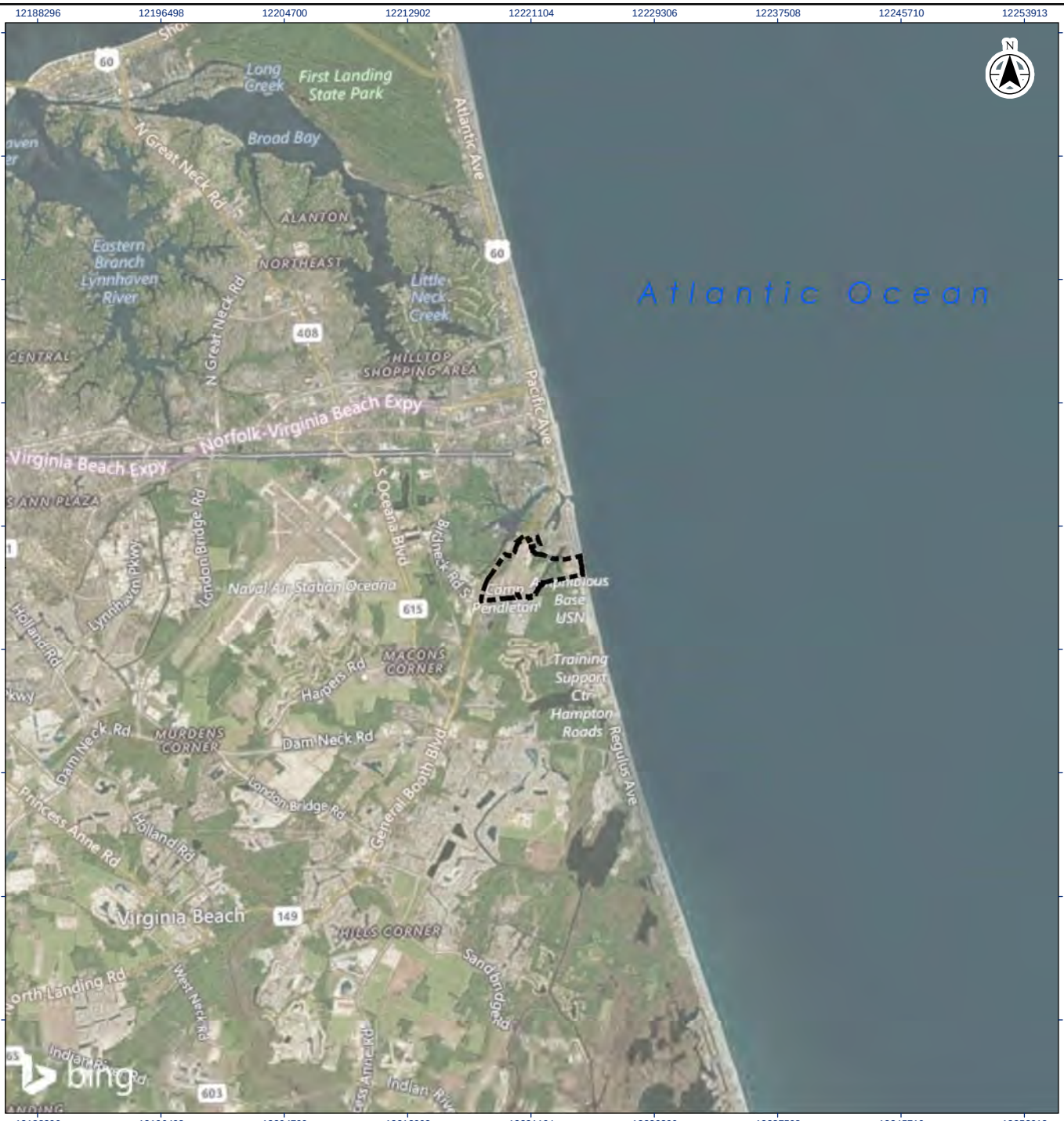

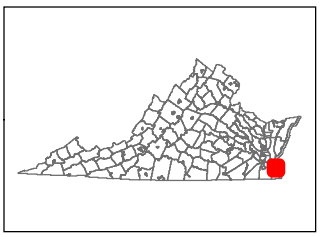

Legend

Project Limits

0 4,900 9,800 Feet

1:120,000 (at original document size of 8.5x11)

Project Location
City of Virginia Beach, VA

203400975
Prepared by ECL on 2017-07-24
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Map Date: 2018-03-05

Figure No.
1

Title
Project Vicinity Map

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Orthoimagery © Bing Maps
3. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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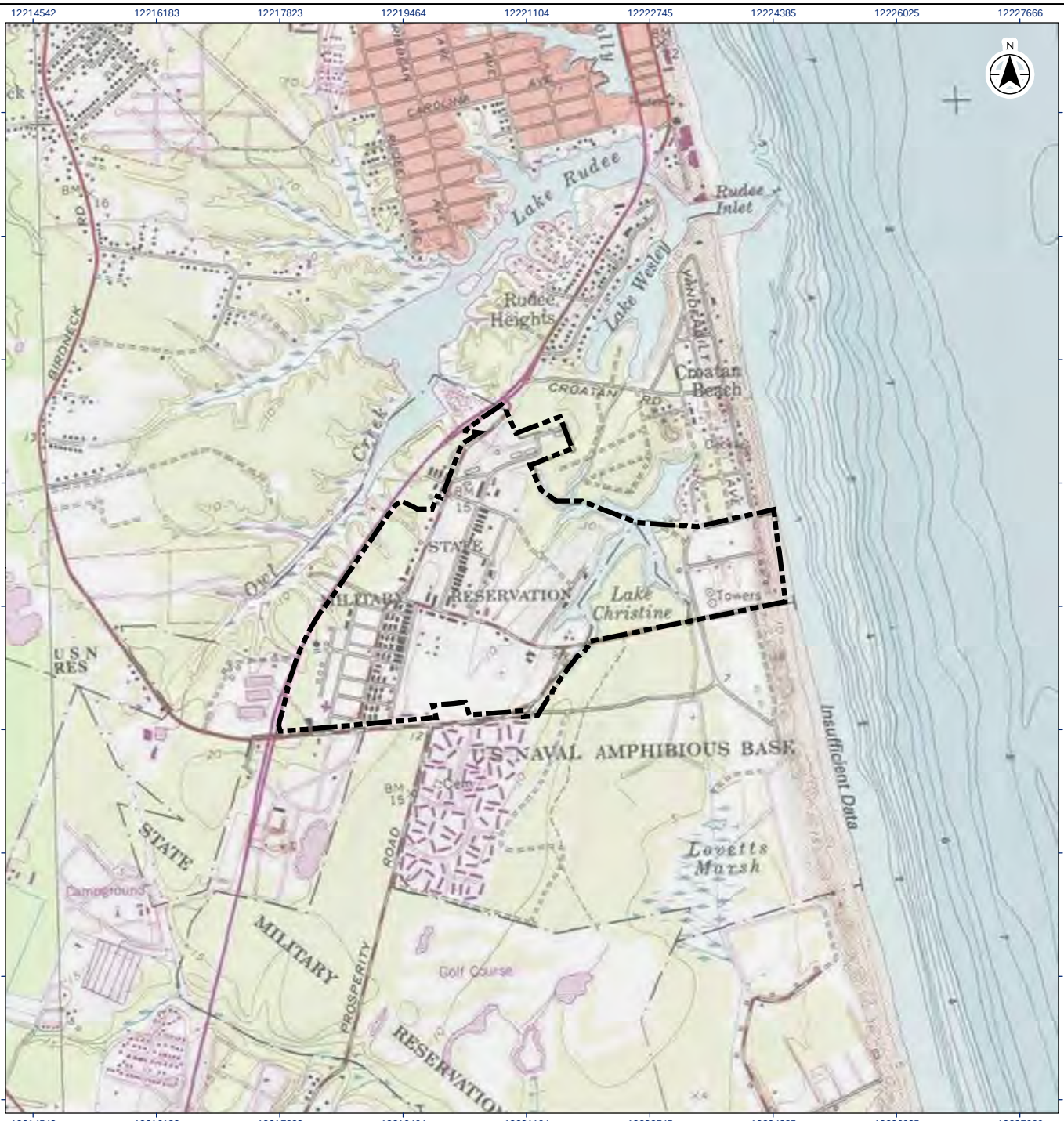
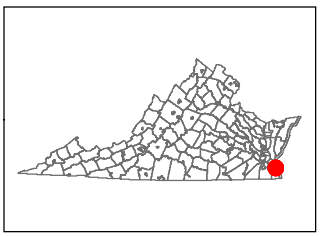
U:\203400975\03_data\gis_cad\gis\000975_e_loc.mxd Revised: 2018-03-05 By: ejlee





Legend

Project Limits

Latitude: 36.816431°

Longitude: -75.97849°

0 1,000 2,000 Feet

1:24,000 (at original document size of 8.5x11)

Project Location
City of Virginia Beach, VA

203400975
Prepared by ECL on 2017-07-24
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Map Date: 2018-03-05

Figure No.
2

Title
Project Location Map

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Topographic map © USGS 7.5 Minute Series Topographic Map

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12217823 12221104 12224385

3471122 3467341 3464560

Figure No.
3

Title
National Wetlands Inventory Map

Map Date: 2018-03-05

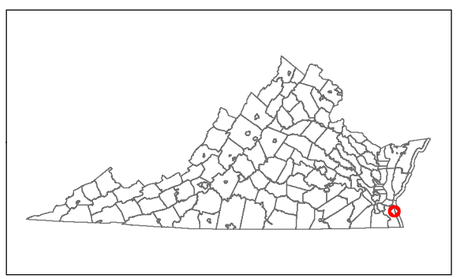
Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Project Location
City of Virginia Beach, Virginia

203400975
Prepared by ECL on 2017-07-24
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

0 1,000 2,000 Feet
1:12,000 (At original document size of 11x17)

Legend
- Project Limits
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Wetlands and waters data provided by USFWS National Wetlands Inventory (NWI)
3. Orthoimagery © Bing Maps
   Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Map Unit Symbol	Description
1	Acredale silt loam
13	Dragston fine sandy loam
15	Duckston fine sand
19	Munden fine sandy loam
21	Nawney silt loam
22E	Newhan fine sand, 2 to 30 percent slopes
3	Augusta loam
33E	Rumford fine sandy loam, 6 to 35 percent slopes
36	Tetotum loam
38	Tomotley loam
40	Udorthents, loamy
41	Udorthents-Urban land complex
42	Urban land
43	Yeopim silt loam
6	Beaches
7	Bojac fine sandy loam
8	Chapanoke silt loam
W	Water

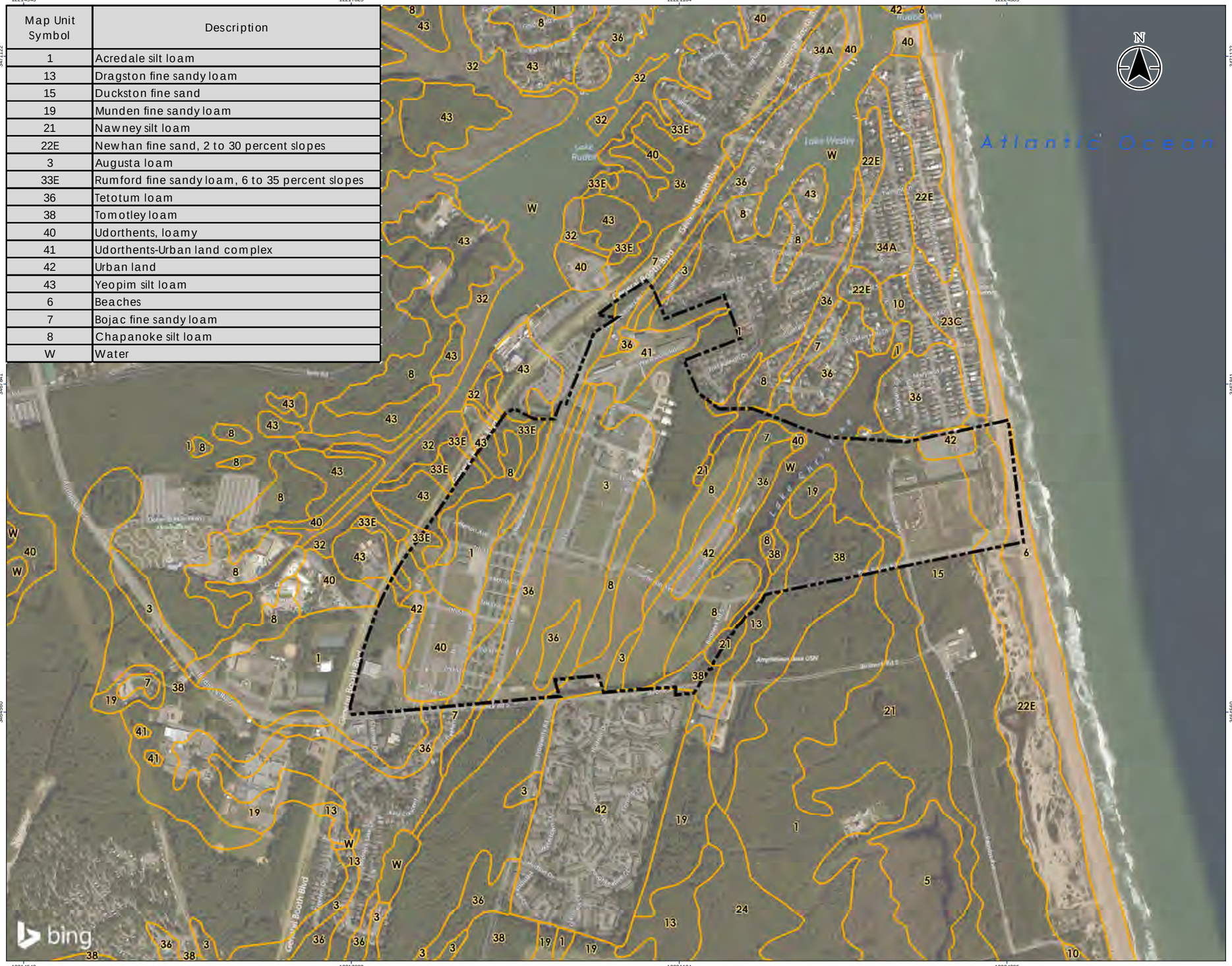


Figure No.
4

Title
Soils Map

Map Date: 2018-03-05

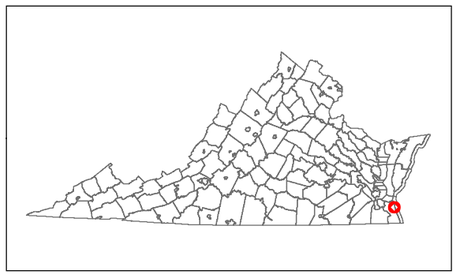
Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Project Location
City of Virginia Beach, Virginia

203400975
Prepared by ECL on 2017-07-24
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

0 1,000 2,000 Feet
1:12,000 (At original document size of 11x17)

Legend
Project Limits
Soils



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502
2. Feet
3. Soils data provided by USDA NRCS SSURGO Soil Survey
4. Orthoimagery © Bing Maps
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Site Data - SMR Camp Pendleton	
Study Area	304.04 Acres ±
Estuarine Emergent Intertidal Wetlands (E2EM)	0.40 Acres ±
Palustrine Forested Wetlands (PFO)	15.46 Acres ±
Palustrine Scrub-Shrub Wetlands (PSS)	0.26 Acres ±
Palustrine Emergent Wetlands (PEM)	1.73 Acres ±
Upper Perennial Stream Channels (R3)	0.01 Acres ± (244 L.F. ±)
Intermittent Stream Channels (R4)	0.02 Acres ± (272 L.F. ±)
Jurisdictional Ditches (R4)	0.08 Acres ± (1,757 L.F. ±)

Previously Delineated Site Data - Lake Christine	
Study Area	27.97 Acres ±
Wetlands	4.50 Acres ±
Open Waters	18.42 Acres ±
Jurisdictional Ditches	0.15 Acres ± (972 L.F. ±)

Site Data - Combined	
Study Area	332.01 Acres ±
Wetlands	22.35 Acres ±
Upper Perennial Stream Channels (R3)	0.01 Acres ± (244 L.F. ±)
Intermittent Stream Channels (R4)	0.02 Acres ± (272 L.F. ±)
Jurisdictional Ditches	0.23 Acres ± (2,729 L.F. ±)
Open Waters	18.42 Acres ±

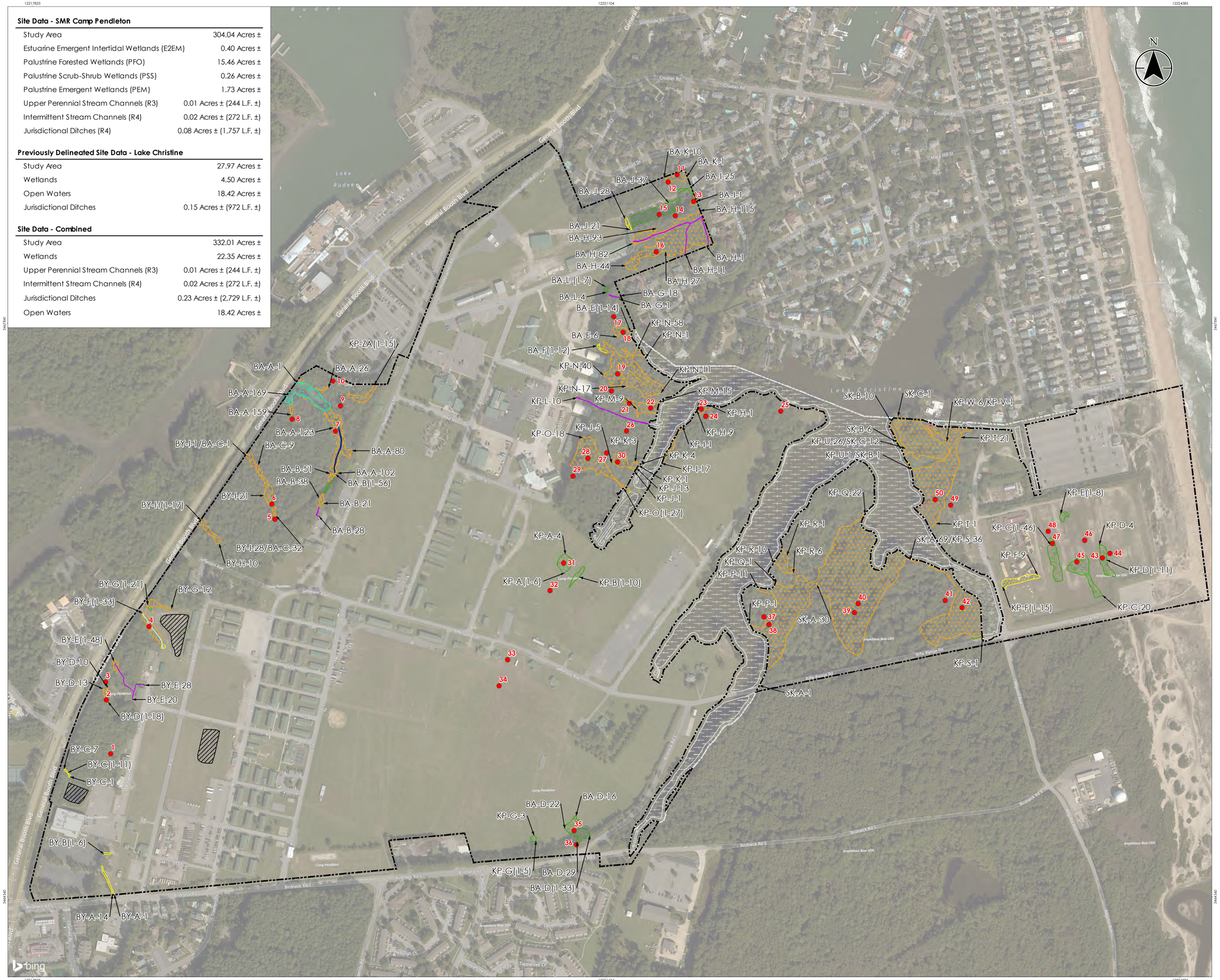


Figure No.
5

Title
Delineation Map

Map Date: 2018-03-05
Revised Date: 2018-06-15

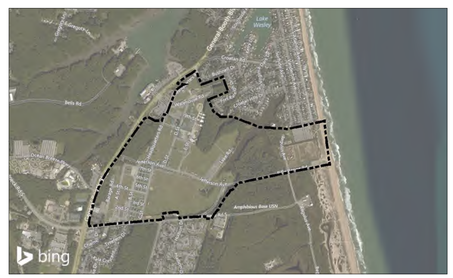
Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Project Location
City of Virginia Beach, VA

203400975
Prepared by MGS on 2017-12-11
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

0 500 1,000 Feet
1:3,000 (At original document size of 24 x 36)

Legend
- Previously Delineated Study Area
- 2-Foot Contour
- Approximate Stormwater Facility
- Approximate Estuarine Emergent Intertidal Wetland Limits (E2EM)
- Approximate Jurisdictional Ditch Limits
- Approximate Palustrine Emergent Wetland Limits (PEM)
- Approximate Palustrine Forested Wetland Limits (PFO)
- Approximate Palustrine Scrub-Shrub Wetland Limits (PSS)
- Approximate Upper Perennial Stream Channel Limits (R3)
- Approximate Intermittent Stream Channel Limits (R4)
- Previously Delineated Jurisdictional Ditch
- Previously Delineated Open Water
- Previously Delineated Wetland Limits



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. The limits of waters of the U.S., including wetlands within the previously delineated study area, have been confirmed by the U.S. Army Corps of Engineers, Confirmation #NAO-2013-1616.
3. The limits of waters of the U.S., including wetlands, shown on this map have been field located by means of sub-meter capable GPS technology and are for planning purposes only.
4. Orthoimagery © Bing Maps
5. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

Stantec

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Appendix A

Pre-Application and/or Jurisdictional Waters Request Form

NORFOLK DISTRICT REGULATORY OFFICE
PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
http://www.nao.usace.army.mil/
Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. Date of Request: **March 2018**

2. Project Name: **2017 SMR Camp Pendleton Wetland Delineation**

3. City or County where property located: **Virginia Beach, Virginia**

4. Address of property and directions (attach a map of the property location and a copy of the property plat): **The site is situated south of Rudee Inlet, north of South Birdneck Road, west of General Booth Boulevard, and can be accessed from General Booth Boulevard (via the Virginia Aquarium and Marine Science Center overflow parking lot). Location and vicinity maps are included in the submittal page.**

5. Coordinates of property (if known): **36.816431°, -75.97849°**

6. Size of property in acres: **332.01**

7. Tax Parcel Number / GPIN (if available):

8. Name of Nearest Waterway: **Lake Christine**

9. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request: **Environmental inventory.**

10. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously? ☒ YES ☐ NO ☐ UNKNOWN,

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

Mr. Scott Kupiec (Williamsburg Environmental Group)
Corps Permit Number: NAO-2013-1616 (Lake Christine)
USACE-Norfolk District Staff: Ms. Nicole L. Woodward (2015), Ms. Katy R. Damico (2013)

Property Owner Contact Information:

Property Owner Name: **LTC Timothy Pillion, Garrison Commander Camp Pendleton State Military Reserve**
Mailing Address: **203 Red Horse Drive**
City: State: Zip: **Virginia Beach, Virginia 23451**
Daytime Telephone: **(757) 493-3122**
E-mail Address: **timothy.d.pillion.mil@mail.mil**

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name: **Mr. Ken Oristaglio**
Commonwealth of Virginia Department of Military Affairs
Mailing Address: **Building 316 Fort Pickett**
City: State: Zip: **Blackstone, Virginia 23824-6316**
Daytime Telephone: **(434) 298-6416**
E-mail Address: **kenneth.l.oristaglio@us.army.mil**

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

Property Owner's Signature

1 MAR 18
Date

Appendix B

Wetland Determination Data Forms

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 1

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND SOUTHEAST OF GENERAL BOOTH HIGHWAY.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	25
Quercus alba	Tree	FACU	20
Acer rubrum	Tree	FAC	15
Quercus phellos	Tree	FACW	15
Acer rubrum	Sapling	FAC	15
Liquidambar styraciflua	Sapling	FAC	15
Liquidambar styraciflua	Shrub	FAC	10
Smilax rotundifolia	Herbaceous	FAC	10
Gelsemium sempervirens	Herbaceous	FAC	5

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 89%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 4/2	100					LOAM
3-20	5Y 7/1	85	10YR 7/8	15	C	M	LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 2

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	YEOPIM SILT LOAM

Summary of Findings: **WETLAND SWALE BELOW FLAG 'BYD-2'**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	30
Liquidambar styraciflua	Tree	FAC	15
Acer rubrum	Sapling	FAC	10
Carpinus caroliniana	Shrub	FAC	5
Juncus effusus	Herbaceous	OBL	15
Toxicodendron radicans	Herbaceous	FAC	10
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Arisaema triphyllum	Herbaceous	FACW	5
Smilax rotundifolia	Herbaceous	FAC	5
Microstegium vimineum	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.7

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF CAREX (10%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	2.5Y 6/3	100					SANDY LOAM
4-20	5Y 8/1	78	10YR 6/8	20	C	M	LOAM
			10YR 5/6	2	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 3

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	YEOPIM SILT LOAM

Summary of Findings: **UPLAND BELOW FLAG 'BYD-10'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus falcata	Tree	FACU	35
Carya tomentosa	Tree	UPL	20
Carpinus caroliniana	Sapling	FAC	15
Liquidambar styraciflua	Shrub	FAC	10
Lonicera japonica	Herbaceous	FACU	5
Smilax rotundifolia	Herbaceous	FAC	5
Smilax rotundifolia	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	5

% Dominant species FAC or wetter: 57%

Prevalence Index: 3.8

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF FESCUE (10%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 3/3	100					LOAM
5-20	2.5Y 7/1	95	2.5Y 5/6	5	C	M	LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 4

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	RUMFORD FINE SANDY

Summary of Findings: **WETLAND BELOW FLAG 'BYF-6'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLOODPLAIN
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: 4

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	25
Liquidambar styraciflua	Tree	FAC	15
Carpinus caroliniana	Sapling	FAC	10
Ulmus americana	Sapling	FAC	5
Baccharis halimifolia	Shrub	FAC	20
Pinus taeda	Shrub	FAC	10
Microstegium vimineum	Herbaceous	FAC	25
Juncus effusus	Herbaceous	OBL	25
Toxicodendron radicans	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Dichanthelium scabriusculum	Herbaceous	OBL	10
Onoclea sensibilis	Herbaceous	FACW	5
Symphyotrichum pilosum	Herbaceous	FAC	5
Smilax rotundifolia	Herbaceous	FAC	5
Dichanthelium dichotomum	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.6

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-7	7.5YR 4/1	98	7.5YR 6/2	2	C	M	CLAY LOAM
7-20	2.5Y 6/1	78	10YR 5/8	20	C	M	CLAY LOAM
			10YR 3/6	2	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 5

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	CHAPANOKE SILT LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'BYI-28'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus phellos	Tree	FACW	20
Acer rubrum	Tree	FAC	15
Carya tomentosa	Tree	UPL	10
Carpinus caroliniana	Sapling	FAC	20
Acer rubrum	Sapling	FAC	10
Athyrium asplenioides	Herbaceous	FAC	5
Lonicera japonica	Herbaceous	FACU	3
Vitis rotundifolia	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	5

% Dominant species FAC or wetter: 75%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-4	10YR 4/4	100					LOAM
4-8	10YR 5/2	100					LOAM
8-20	2.5Y 6/2	90	10YR 6/8	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 6

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	CHAPANOKE SILT LOAM

Summary of Findings: **WETLAND SWALE BELOW FLAG 'BYI-20'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 8

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	45
Liquidambar styraciflua	Tree	FAC	25
Carpinus caroliniana	Sapling	FAC	30
Ulmus americana	Sapling	FAC	15
Carpinus caroliniana	Shrub	FAC	20
Athyrium asplenioides	Herbaceous	FAC	5
Microstegium vimineum	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%
Acer rubrum	Sapling	FAC	10

% Dominant species FAC or wetter: 100%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/2	100					CLAY LOAM
1-16	5Y 6/1	70	7.5YR 6/8	25	C	M	CLAY LOAM
			7.5YR 5/8	5	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 7

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	RUMFORD FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BAA-123'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	45
Liquidambar styraciflua	Sapling	FAC	20
Acer rubrum	Sapling	FAC	15
Morella cerifera	Shrub	FAC	15
Pinus taeda	Shrub	FAC	5
Liquidambar styraciflua	Shrub	FAC	5
Microstegium vimineum	Herbaceous	FAC	4
Smilax rotundifolia	Herbaceous	FAC	5
Juncus effusus	Herbaceous	OBL	3
Smilax rotundifolia	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 100%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 3/2	100					FINE SANDY LOAM
3-8	10YR 4/2	90	10YR 5/8	10	C	M	FINE SANDY LOAM
8-20	10YR 6/2	80	10YR 5/8	20	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 8

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	RUMFORD FINE SANDY LOAM

Summary of Findings: **UPLAND SWALE NEAR FLAG 'BAA-159'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	25
Liquidambar styraciflua	Tree	FAC	15
Quercus rubra	Sapling	FACU	35
Liquidambar styraciflua	Sapling	FAC	20
Liquidambar styraciflua	Shrub	FAC	20
Vitis rotundifolia	Herbaceous	FAC	10
Lonicera japonica	Herbaceous	FACU	5

Non-Dominant Species	Stratum	IND	%
Smilax rotundifolia	Herbaceous	FAC	3

% Dominant species FAC or wetter: 71%

Prevalence Index: 3.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	2.5Y 3/3	100					FINE SANDY LOAM
3-20	2.5Y 5/3	90	2.5Y 6/6	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 9

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	RUMFORD FINE SANDY LOAM

Summary of Findings: **UPLAND DRAINAGE EAST OF 'BAA' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	20
Pinus taeda	Tree	FAC	15
Liriodendron tulipifera	Tree	FACU	15
Acer rubrum	Sapling	FAC	15
Quercus rubra	Sapling	FACU	15
Liquidambar styraciflua	Sapling	FAC	10
Liquidambar styraciflua	Shrub	FAC	10
Carpinus caroliniana	Shrub	FAC	10
Ilex opaca	Shrub	FAC	5
Vitis rotundifolia	Herbaceous	FAC	5
Microstegium vimineum	Herbaceous	FAC	5
Toxicodendron radicans	Herbaceous	FAC	3
Smilax rotundifolia	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 85%

Prevalence Index: 3.2

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-20	2.5Y 5/3	95	10YR 4/6	5	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 10

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	YEOPIM SILT LOAM

Summary of Findings: **UPLAND SWALE SOUTHEAST OF 'BAA' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	25
Acer rubrum	Tree	FAC	10
Acer rubrum	Sapling	FAC	20
Carpinus caroliniana	Sapling	FAC	5
Acer rubrum	Shrub	FAC	20
Quercus rubra	Shrub	FACU	15
Carpinus caroliniana	Shrub	FAC	10
Smilax rotundifolia	Herbaceous	FAC	15
Lonicera japonica	Herbaceous	FACU	5
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Campsis radicans	Herbaceous	FAC	3

% Dominant species FAC or wetter: 80%

Prevalence Index: 3.1

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-20	2.5Y 5/3	85	10YR 5/4	15	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 11

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND NORTHEAST OF FLAG 'BAK-6'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	25
Quercus phellos	Tree	FACW	15
Nyssa sylvatica	Sapling	FAC	15
Liquidambar styraciflua	Sapling	FAC	5
Acer rubrum	Sapling	FAC	5
Vaccinium corymbosum	Shrub	FACW	10
Liquidambar styraciflua	Shrub	FAC	5
Clethra alnifolia	Shrub	FACW	5
Microstegium vimineum	Herbaceous	FAC	40
Smilax rotundifolia	Vine	FAC	70

Non-Dominant Species	Stratum	IND	%
Solidago rugosa	Herbaceous	FAC	10
Rubus argutus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 4/1	100					FINE SANDY LOAM
5-20	10YR 6/1	80	10YR 5/6	15	C	M	FINE SANDY LOAM
			10YR 5/8	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 12

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND EAST OF FLAG 'BAK-8'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	30
Quercus alba	Tree	FACU	20
Liquidambar styraciflua	Sapling	FAC	15
Acer rubrum	Sapling	FAC	10
Clethra alnifolia	Shrub	FACW	25
Vaccinium corymbosum	Shrub	FACW	15
Pteridium aquilinum	Herbaceous	FACU	15
Microstegium vimineum	Herbaceous	FAC	5
Smilax rotundifolia	Herbaceous	FAC	5
Lonicera japonica	Vine	FACU	10
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	10
Pinus taeda	Shrub	FAC	5

% Dominant species FAC or wetter: 73%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 3/2	100					LOAM
3-20	10YR 6/1	90	10YR 5/8	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 13

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND NORTH OF FLAG 'BAI-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	15
Quercus phellos	Tree	FACW	15
Liquidambar styraciflua	Sapling	FAC	10
Liquidambar styraciflua	Shrub	FAC	20
Acer rubrum	Shrub	FAC	10
Microstegium vimineum	Herbaceous	FAC	30
Boehmeria cylindrica	Herbaceous	FACW	20

Non-Dominant Species	Stratum	IND	%
Toxicodendron radicans	Herbaceous	FAC	15
Smilax rotundifolia	Herbaceous	FAC	10
Campsis radicans	Herbaceous	FAC	10
Juncus effusus	Herbaceous	OBL	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.7

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 2/1	100					LOAM
1-7	2.5Y 5/1	95	7.5YR 6/6	3	C	M	CLAY LOAM
			7.5YR 5/8	2	C	PL	
7-20	2.5Y 6/1	93	10YR 6/6	7	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 14

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND EAST OF FLAG 'BAS-50'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	15
Prunus serotina	Sapling	FACU	20
Acer rubrum	Sapling	FAC	5
Prunus serotina	Shrub	FACU	5
Acer rubrum	Shrub	FAC	5
Quercus rubra	Shrub	FACU	5
Liquidambar styraciflua	Shrub	FAC	5
Smilax rotundifolia	Herbaceous	FAC	15
Vitis rotundifolia	Herbaceous	FAC	10
Smilax glauca	Herbaceous	FAC	10

Non-Dominant Species	Stratum	IND	%
Gelsemium sempervirens	Herbaceous	FAC	5

% Dominant species FAC or wetter: 70%

Prevalence Index: 3.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-3	7.5YR 3/1	100					FINE SANDY LOAM
3-17	2.5Y 5/2	97	7.5YR 5/6	3	C	M	FINE SANDY CLAY LOAM
17-20	2.5Y 5/1	96	2.5YR 4/8	2	C	PL	FINE SANDY CLAY LOAM
			2.5YR 4/6	2	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 15

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	UDORTHENTS-URBAN LAND COMPLEX

Summary of Findings: **WETLAND WEST OF FLAG 'BAJ-3'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	5
Liquidambar styraciflua	Shrub	FAC	5
Phragmites australis	Herbaceous	FACW	40
Microstegium vimineum	Herbaceous	FAC	30

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	10
Juncus effusus	Herbaceous	OBL	5
Solidago altissima	Herbaceous	FACU	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.6

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	5Y 4/1	92	10YR 5/6	5	C	M	FINE SANDY CLAY LOAM
			10YR 6/6	3	C	M	
6-12	2.5Y 6/2	90	10YR 5/6	10	C	M	FINE SANDY CLAY LOAM
12-20	10YR 3/1	83	2.5Y 6/1	15	INCLUSIONS	M	CLAY LOAM
			7.5YR 4/8	2	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 16

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND WEST OF FLAG 'BAH-32'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus alba	Tree	FACU	30
Quercus laurifolia	Tree	FACW	15
Nyssa sylvatica	Sapling	FAC	10
Acer rubrum	Sapling	FAC	10
Liquidambar styraciflua	Sapling	FAC	5
Liquidambar styraciflua	Shrub	FAC	10
Clethra alnifolia	Shrub	FACW	5
Solidago patula	Herbaceous	OBL	5
Microstegium vimineum	Herbaceous	FAC	3
Carex lurida	Herbaceous	OBL	2
Smilax rotundifolia	Vine	FAC	15

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 91%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-2	10YR 2/1	100					LOAM
2-10	2.5Y 6/1	100					CLAY LOAM
10-20	2.5Y 6/1	85	10YR 5/6	15	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 17

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND WEST OF FLAG 'BAE-10'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	35
Liquidambar styraciflua	Tree	FAC	30
Acer rubrum	Sapling	FAC	20
Nyssa sylvatica	Sapling	FAC	15
Pteridium aquilinum	Herbaceous	FACU	10
Smilax rotundifolia	Vine	FAC	15

Non-Dominant Species	Stratum	IND	%
Nyssa sylvatica	Tree	FAC	15

% Dominant species FAC or wetter: 83%

Prevalence Index: 3.1

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-20	10YR 6/3	100					FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 18

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND SOUTH OF FLAG 'BAE-13'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	25
Liquidambar styraciflua	Sapling	FAC	20
Acer rubrum	Shrub	FAC	15
Osmunda spectabilis	Herbaceous	OBL	5
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF CAREX (15%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 4/1	100					FINE SANDY LOAM
5-20	10YR 6/2	90	10YR 5/8	10	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 19

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND BELOW FLAG 'KPN-40'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	15
Pinus taeda	Tree	FAC	10
Acer rubrum	Tree	FAC	10
Ulmus americana	Sapling	FAC	10
Acer rubrum	Sapling	FAC	10
Osmunda spectabilis	Herbaceous	OBL	15
Athyrium asplenioides	Herbaceous	FAC	10

Non-Dominant Species	Stratum	IND	%
Ulmus americana	Tree	FAC	5
Smilax rotundifolia	Herbaceous	FAC	5
Microstegium vimineum	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.7

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/2	100					LOAM
1-20	2.5Y 7/1	75	2.5Y 6/8	25	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 20

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'KPN-35'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus rubra	Tree	FACU	50
Quercus rubra	Sapling	FACU	10
Acer rubrum	Sapling	FAC	5
Baccharis halimifolia	Shrub	FAC	15
Liquidambar styraciflua	Shrub	FAC	5
Vitis rotundifolia	Herbaceous	FAC	20
Vitis rotundifolia	Vine	FAC	10
Smilax rotundifolia	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	10
Gelsemium sempervirens	Herbaceous	FAC	5
Lonicera japonica	Herbaceous	FACU	5
Toxicodendron radicans	Herbaceous	FAC	3

% Dominant species FAC or wetter: 75%

Prevalence Index: 3.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-3	10YR 3/3	100					LOAM
3-20	10YR 6/2	95	2.5Y 6/6	5	C	M	CLAY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 21

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND NEAR FLAG 'KPM-9'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 10

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	20
Acer rubrum	Tree	FAC	15
Carya tomentosa	Sapling	UPL	15
Acer rubrum	Sapling	FAC	10
Lindera benzoin	Shrub	FACW	10
Vitis rotundifolia	Herbaceous	FAC	10
Lonicera japonica	Herbaceous	FACU	5
Smilax rotundifolia	Herbaceous	FAC	5
Toxicodendron radicans	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	5
Cornus florida	Sapling	FACU	5

% Dominant species FAC or wetter: 78%

Prevalence Index: 3.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/2	100					LOAM
1-3	10YR 5/2	90	10YR 5/6	10	C	M	LOAM
3-20	2.5Y 6/2	90	10YR 5/6	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 22

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND BELOW FLAG 'KPM-9'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	X Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	30
Acer rubrum	Tree	FAC	15
Acer rubrum	Sapling	FAC	10
Liquidambar styraciflua	Sapling	FAC	10
Elaeagnus umbellata	Shrub	UPL	5
Vaccinium corymbosum	Shrub	FACW	5
Onoclea sensibilis	Herbaceous	FACW	65
Smilax rotundifolia	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	10
Juncus effusus	Herbaceous	OBL	10
Smilax rotundifolia	Herbaceous	FAC	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 88%

Prevalence Index: 2.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-5	10YR 4/2	100					LOAM
5-8	10YR 5/2	100					LOAM
8-20	10YR 6/2	95	10YR 6/6	5	C	M	CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 23

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	CHAPANOKE SILT LOAM

Summary of Findings: **WETLAND BELOW FLAG 'KPH-6'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	25
Acer rubrum	Tree	FAC	20
Acer rubrum	Sapling	FAC	15
Morella cerifera	Shrub	FAC	45
Gelsemium sempervirens	Herbaceous	FAC	5
Carex albolutescens	Herbaceous	FACW	5
Vitis rotundifolia	Herbaceous	FAC	5

Non-Dominant Species	Stratum	IND	%
Ulmus americana	Tree	FAC	5
Pinus taeda	Shrub	FAC	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF CAREX (5%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	10YR 5/2	100					CLAY LOAM
6-20	5Y 6/1	85	10YR 6/8	15	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 24

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	CHAPANOKE SILT LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'KPH-6'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	50
Liquidambar styraciflua	Tree	FAC	15
Acer rubrum	Sapling	FAC	15
Liquidambar styraciflua	Sapling	FAC	15
Morella cerifera	Shrub	FAC	15
Vitis rotundifolia	Herbaceous	FAC	5
Lonicera japonica	Herbaceous	FACU	5
Smilax bona-nox	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%
Ilex glabra	Sapling	FACW	5

% Dominant species FAC or wetter: 88%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-16	2.5Y 5/4	100					LOAM
16-20	2.5Y 5/2	95	5YR 3/4	5	C	M	CLAY

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 25

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	BOJAC FINE SANDY LOAM

Summary of Findings: **UPLAND SWALE WEST OF LAKE CHRISTINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	45
Liquidambar styraciflua	Tree	FAC	20
Acer rubrum	Shrub	FAC	20
Liquidambar styraciflua	Shrub	FAC	15
Carya tomentosa	Shrub	UPL	10
Toxicodendron radicans	Herbaceous	FAC	10
Smilax rotundifolia	Herbaceous	FAC	5
Smilax bona-nox	Vine	FAC	5
Smilax rotundifolia	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	10
Lindera benzoin	Shrub	FACW	5
Dichanthelium dichotomum	Herbaceous	FAC	3

% Dominant species FAC or wetter: 89%

Prevalence Index: 3.1

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/3	100					LOAM
1-14	10YR 5/3	100					LOAM
14-20	10YR 6/3	90	7.5YR 5/8	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 26

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND SOUTH OF FLAG 'KPL-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	30
Acer rubrum	Tree	FAC	25
Acer rubrum	Sapling	FAC	15
Pinus taeda	Shrub	FAC	5
Acer rubrum	Shrub	FAC	5
Vitis rotundifolia	Herbaceous	FAC	5
Lonicera japonica	Herbaceous	FACU	5
Smilax rotundifolia	Herbaceous	FAC	5
Smilax rotundifolia	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Quercus rubra	Tree	FACU	5

% Dominant species FAC or wetter: 89%

Prevalence Index: 3.1

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	7.5YR 4/2	100					LOAM
8-20	10YR 6/1	95	10YR 6/8	5	C	M	LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 27

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'KPJ-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	25
Acer rubrum	Tree	FAC	15
Liquidambar styraciflua	Sapling	FAC	10
Liquidambar styraciflua	Shrub	FAC	10
Smilax rotundifolia	Herbaceous	FAC	5
Campsis radicans	Herbaceous	FAC	3
Smilax bona-nox	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 100%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	10YR 4/2	100					LOAM
6-20	5Y 7/1	90	10YR 5/4	10	C	M	LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 28

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND NEAR FLAG 'KPO-13'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	_X_ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	_X_ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	60
Acer rubrum	Tree	FAC	35
Pinus taeda	Sapling	FAC	5
Smilax rotundifolia	Herbaceous	FAC	15
Lonicera japonica	Herbaceous	FACU	5
Chasmanthium latifolium	Herbaceous	FAC	5
Osmunda spectabilis	Herbaceous	OBL	5

Non-Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	25
Nyssa sylvatica	Tree	FAC	25

% Dominant species FAC or wetter: 86%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 3/3	100					LOAM
2-20	2.5Y 5/2	80	10YR 4/6	15	C	M	CLAY LOAM
			10YR 5/8	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	_X_ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 29

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND NEAR FLAG 'KPO-13'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	65
Diospyros virginiana	Tree	FAC	40
Cornus florida	Sapling	FACU	15
Liquidambar styraciflua	Sapling	FAC	5
Ligustrum sinense	Shrub	FAC	15
Morella cerifera	Shrub	FAC	10
Elymus virginicus	Herbaceous	FAC	20
Dichanthelium scoparium	Herbaceous	FACW	20
Lonicera japonica	Herbaceous	FACU	10

Non-Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	25

% Dominant species FAC or wetter: 78%

Prevalence Index: 3.0

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-2	10YR 3/2	100					LOAM
2-6	10YR 5/2	100					CLAY LOAM
6-20	10YR 6/2	85	10YR 5/6	15	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 30

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. YOUNG	Site Longitude:	-75.97849°
Date:	10/12/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND BELOW FLAG 'KPJ-8'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	X Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	65
Baccharis halimifolia	Shrub	FAC	15
Pinus taeda	Shrub	FAC	5
Microstegium vimineum	Herbaceous	FAC	10
Juncus effusus	Herbaceous	OBL	5
Smilax rotundifolia	Herbaceous	FAC	3

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	10

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	10YR 4/3	100					LOAM
6-20	10YR 7/1	85	2.5Y 7/4	15	C	M	LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 31

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **WETLAND IN A SHALLOW DEPRESSION AT 'KPA' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 16

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Paspalum dilatatum	Herbaceous	FAC	70

Non-Dominant Species	Stratum	IND	%
Eleocharis obtusa	Herbaceous	OBL	10
Packera anonyma	Herbaceous	FACU	6
Diodia virginiana	Herbaceous	FACW	5
Cyperus iria	Herbaceous	FACW	2
Hydrocotyle umbellata	Herbaceous	OBL	2
Ludwigia palustris	Herbaceous	OBL	2

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.7

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	2.5Y 4/1	100					CLAY LOAM
1-16	5Y 5/1	80	10YR 5/8	15	C	M	CLAY LOAM
			7.5YR 4/6	5	C	PL	
16-20	10YR 5/1	100					FINE SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 32

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND NEAR 'KPA' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Paspalum dilatatum	Herbaceous	FAC	70

Non-Dominant Species	Stratum	IND	%
Lespedeza procumbens	Herbaceous	UPL	40
Plantago lanceolata	Herbaceous	FACU	10
Oxalis stricta	Herbaceous	UPL	10
Cynodon dactylon	Herbaceous	FACU	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 3.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 4/3	100					LOAM
3-15	2.5Y 5/2	85	7.5YR 5/8	15	C	M	CLAY
15-20	2.5Y 6/1	98	2.5Y 5/6	2	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 33

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND IN FIELD ABOVE 'KPA' LINE; SOUTH OF JEFFERSON AVENUE.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

UNDERGROUND STORM DRAIN WITH DROP INLETS PRESENT.

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Paspalum dilatatum	Herbaceous	FAC	60
Cynodon dactylon	Herbaceous	FACU	60

Non-Dominant Species	Stratum	IND	%
Diodia teres	Herbaceous	FACU	5
Symphyotrichum racemosum	Herbaceous	FACW	3

% Dominant species FAC or wetter: 50%

Prevalence Index: 3.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: ____
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	7.5YR 5/2	100					LOAM
2-12	10YR 5/2	98	10YR 4/6	2	C	M	CLAY LOAM
12-20	10YR 5/2	90	10YR 2/1	10	INCLUSIONS	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

ASPHALT PRESENT (20%) WITHIN THE 12-20" PROFILE.

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 34

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	ACREDALE SILT LOAM

Summary of Findings: **UPLAND SOUTH OF DATA POINT '33'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

EXISTING STORMWATER DRAIN WITH DROP INLETS PRESENT.

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Cynodon dactylon	Herbaceous	FACU	30
Paspalum dilatatum	Herbaceous	FAC	25

Non-Dominant Species	Stratum	IND	%
Symphyotrichum lateriflorum	Herbaceous	FAC	5

% Dominant species FAC or wetter: 50%

Prevalence Index: 3.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 4/3	95	7.5YR 4/6	5	C	M	FINE SANDY LOAM
5-16	10YR 5/2	100					FINE SANDY LOAM
16-20	2.5Y 6/3	99	10YR 5/1	1	D	M	FINE SANDY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	1cm Muck (A9)
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	2cm Muck (A10)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	Reduced Vertic (F18)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Piedmont Floodplain Soils (F19)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Anomalous Bright Loamy Soils (F20)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Red Parent Material (TF2)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Other
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 35

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/13/2017	Soil Map Unit Name:	TETOTUM LOAM

Summary of Findings: **WETLAND SOUTH OF FLAG 'BAD-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	X Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	20
Hydrocotyle umbellata	Herbaceous	OBL	20
Persicaria hydropiperoides	Herbaceous	OBL	15
Paspalum dilatatum	Herbaceous	FAC	15

Non-Dominant Species	Stratum	IND	%
Symphyotrichum pilosum	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 1.8

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 4/1	95	10YR 5/8	5	C	M	FINE SANDY LOAM
3-20	10YR 5/2	85	10YR 5/8	15	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 36

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/13/2017	Soil Map Unit Name:	TETOTUM LOAM

Summary of Findings: **UPLAND SOUTHEAST OF FLAG 'BAD-29'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Tree	FAC	35
Pinus taeda	Sapling	FAC	10
Liquidambar styraciflua	Sapling	FAC	5
Acer rubrum	Shrub	FAC	20
Quercus rubra	Shrub	FACU	15
Lespedeza cuneata	Herbaceous	FACU	10
Andropogon virginicus	Herbaceous	FAC	10
Smilax rotundifolia	Vine	FAC	15
Smilax glauca	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Morella cerifera	Shrub	FAC	5

% Dominant species FAC or wetter: 78%

Prevalence Index: 3.2

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-11	10YR 4/1	100					FINE SANDY LOAM
11-20	2.5Y 4/1	99	2.5Y 6/6	1	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 37

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	CHAPANOKE SILT LOAM

Summary of Findings: **UPLAND AT FLAG 'KPP-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1/4B
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus rubra	Tree	FACU	60
Acer rubrum	Tree	FAC	30
Nyssa sylvatica	Sapling	FAC	10
Liquidambar styraciflua	Sapling	FAC	5
Pinus taeda	Sapling	FAC	5
Ligustrum sinense	Shrub	FAC	15
Smilax rotundifolia	Herbaceous	FAC	15
Chasmanthium latifolium	Herbaceous	FAC	5

Non-Dominant Species	Stratum	IND	%
Nyssa sylvatica	Tree	FAC	15
Carpinus caroliniana	Tree	FAC	15

% Dominant species FAC or wetter: 88%

Prevalence Index: 3.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-4	10YR 4/3	100					SANDY LOAM
4-20	10YR 4/4	85	7.5YR 5/6	10	C	M	SANDY CLAY LOAM
			7.5YR 4/6	5	C	PL	

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	___ 1cm Muck (A9)
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 2cm Muck (A10)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ Reduced Vertic (F18)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Piedmont Floodplain Soils (F19)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Anomalous Bright Loamy Soils (F20)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Red Parent Material (TF2)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Very Shallow Dark Surface (TF12)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Other
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 38

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	TOMOTELEY LOAM

Summary of Findings: **WETLAND AT FLAG 'KPP-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO4A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	75
Acer rubrum	Tree	FAC	25
Acer rubrum	Sapling	FAC	25
Nyssa sylvatica	Sapling	FAC	10
Vaccinium formosum	Shrub	FAC	10
Woodwardia areolata	Herbaceous	OBL	50
Microstegium vimineum	Herbaceous	FAC	15
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	10YR 3/2	100					SANDY LOAM
4-20	10YR 4/2	85	7.5YR 4/6	15	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 39

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	TOMOTLEY LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'SKA-54'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1/4B
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	65
Ligustrum sinense	Sapling	FAC	15
Acer rubrum	Sapling	FAC	10
Ligustrum sinense	Shrub	FAC	10
Persea borbonia	Shrub	FACW	5
Microstegium vimineum	Herbaceous	FAC	25
Lonicera japonica	Herbaceous	FACU	15
Woodwardia areolata	Herbaceous	OBL	10

Non-Dominant Species	Stratum	IND	%
Vitis rotundifolia	Herbaceous	FAC	10
Toxicodendron radicans	Herbaceous	FAC	5

% Dominant species FAC or wetter: 88%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-3	10YR 3/3	100					LOAM
3-8	2.5Y 3/2	100					CLAY LOAM
8-20	10YR 4/2	85	10YR 4/6	5	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 40

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	TOMOTLEY LOAM

Summary of Findings: **WETLAND AT FLAG 'SKA-50'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1/4B
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	40
Acer rubrum	Tree	FAC	30
Acer rubrum	Sapling	FAC	15
Ligustrum sinense	Shrub	FAC	35
Woodwardia areolata	Herbaceous	OBL	40
Microstegium vimineum	Herbaceous	FAC	15
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Nyssa sylvatica	Tree	FAC	15

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.6

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	10YR 3/2	100					LOAM
6-20	10YR 4/2	85	10YR 5/8	15	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 41

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	TOMOTLEY LOAM

Summary of Findings: **UPLAND AT FLAG 'KPS-19'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1/4B
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	60
Acer rubrum	Tree	FAC	30
Quercus phellos	Sapling	FACW	15
Quercus rubra	Sapling	FACU	10
Morella cerifera	Shrub	FAC	10
Microstegium vimineum	Herbaceous	FAC	70

Non-Dominant Species	Stratum	IND	%
Diospyros virginiana	Tree	FAC	15
Woodwardia areolata	Herbaceous	OBL	10

% Dominant species FAC or wetter: 83%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-8	10YR 2/2	100					LOAM
8-20	10YR 4/2	100					CLAY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 42

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	S. KUPIEC	Site Longitude:	-75.97849°
Date:	10/16/2017	Soil Map Unit Name:	NAWNEY SILT LOAM

Summary of Findings: **WETLAND AT FLAG 'KPS-19'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1/4B
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	40
Acer rubrum	Tree	FAC	25
Nyssa sylvatica	Sapling	FAC	10
Quercus phellos	Sapling	FACW	5
Morella cerifera	Shrub	FAC	25
Vaccinium formosum	Shrub	FAC	10
Microstegium vimineum	Herbaceous	FAC	35
Woodwardia areolata	Herbaceous	OBL	15

Non-Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	10
Lonicera japonica	Herbaceous	FACU	10

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.8

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	10YR 2/2	100					LOAM
6-20	10YR 4/2	85	10YR 5/8	10	C	M	CLAY LOAM
			10YR 4/6	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 43

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **WETLAND AT FLAG 'KPD-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Morella cerifera	Shrub	FAC	5
Juncus scirpoides	Herbaceous	FACW	60
Juncus tenuis	Herbaceous	FAC	60

Non-Dominant Species	Stratum	IND	%
Scirpus pendulus	Herbaceous	OBL	30
Packera anonyma	Herbaceous	FACU	20
Xyris ambigua	Herbaceous	OBL	15
Dichanthelium aciculare	Herbaceous	FACU	10
Rhexia virginica	Herbaceous	FACW	5
Dichanthelium scabriusculum	Herbaceous	OBL	5

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.4

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 4/2	90	10YR 5/3	10	C	M	SANDY LOAM
2-20	5Y 5/2	95	7.5YR 5/8	5	C	M	SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	X Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 44

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	NEWHAN FINE SAND

Summary of Findings: **UPLAND NEAR FLAG 'KPD-11'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 18

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Diodia teres	Herbaceous	FACU	60
Andropogon virginicus	Herbaceous	FAC	30

Non-Dominant Species	Stratum	IND	%
Dichanthelium aciculare	Herbaceous	FACU	10
Verbesina occidentalis	Herbaceous	FACU	5
Linum medium	Herbaceous	FAC	5
Juncus scirpoides	Herbaceous	FACW	5
Helianthus angustifolius	Herbaceous	FACW	3

% Dominant species FAC or wetter: 50%

Prevalence Index: 3.6

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: ____
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-14	2.5Y 5/3	95	7.5YR 5/3	5	C	M	FINE SAND
14-18	10YR 6/4	90	10YR 5/2	10	D	M	FINE SAND
18-20	2.5Y 6/3	98	2.5Y 6/8	2	C	M	FINE SAND

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	___ 1cm Muck (A9)
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 2cm Muck (A10)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ Reduced Vertic (F18)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Piedmont Floodplain Soils (F19)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Anomalous Bright Loamy Soils (F20)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Red Parent Material (TF2)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Very Shallow Dark Surface (TF12)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Other
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 45

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **WETLAND NEAR FLAG 'KPC-29'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Morella cerifera	Shrub	FAC	7
Juncus scirpoides	Herbaceous	FACW	60
Juncus tenuis	Herbaceous	FAC	50

Non-Dominant Species	Stratum	IND	%
Mikania scandens	Herbaceous	FACW	30
Dichanthelium scoparium	Herbaceous	FACW	20
Echinochloa muricata	Herbaceous	FACW	15
Solidago sempervirens	Herbaceous	FACW	5
Rhexia virginica	Herbaceous	FACW	5
Erigeron annuus	Herbaceous	FACU	2

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 3/3	100					LOAMY SAND
2-4	2.5Y 5/2	93	10YR 3/6	5	C	M	SAND
			10YR 6/8	2	C	PL	
4-20	2.5Y 5/2	80	7.5YR 4/6	20	C	M	SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	X Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 46

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **UPLAND NEAR FLAG 'KPC-29',**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium aciculare	Herbaceous	FACU	10
Juncus scirpoides	Herbaceous	FACW	10
Juncus tenuis	Herbaceous	FAC	10
Hypericum crux-andreae	Herbaceous	FACW	10
Digitaria ischaemum	Herbaceous	UPL	10

Non-Dominant Species	Stratum	IND	%
Persicaria pensylvanica	Herbaceous	FACW	5
Cyperus iria	Herbaceous	FACW	5
Echinochloa muricata	Herbaceous	FACW	5
Panicum virgatum	Herbaceous	FAC	3
Dichanthelium scoparium	Herbaceous	FACW	3
Rhynchospora inexpansa	Herbaceous	FACW	2

% Dominant species FAC or wetter: 60%

Prevalence Index: 2.9

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-2	10YR 5/3	100					SANDY CLAY LOAM
2-3	2.5Y 3/3	100					SANDY CLAY LOAM
3-8	5G 5/1	100					CLAY LOAM
8-20	2.5Y 5/6	90	7.5YR 5/6	10	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	X Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOILS ARE HIGHLY VARIABLE AND DISTURBED.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 47

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	8/2/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **WETLAND NEAR FLAG 'KPC-44'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus scirpoides	Herbaceous	FACW	20
Rhynchospora inexpansa	Herbaceous	FACW	20
Andropogon virginicus	Herbaceous	FAC	15

Non-Dominant Species	Stratum	IND	%
Dichanthelium aciculare	Herbaceous	FACU	10
Diodia virginiana	Herbaceous	FACW	10
Rhexia virginica	Herbaceous	FACW	2

% Dominant species FAC or wetter: 100%

Prevalence Index: 2.5

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 4/2	98	10YR 3/6	2	C	M	SAND
2-4	10YR 5/3	100					SAND
4-20	2.5Y 5/1	98	2.5Y 6/6	2	C	M	SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	X Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 48

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	K. PRESGRAVES	Site Longitude:	-75.97849°
Date:	10/17/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **UPLAND ABOVE FLAG 'KPC-46'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium aciculare	Herbaceous	FACU	70
Andropogon virginicus	Herbaceous	FAC	40

Non-Dominant Species	Stratum	IND	%
Juncus tenuis	Herbaceous	FAC	15
Juncus scirpoides	Herbaceous	FACW	10
Diodia teres	Herbaceous	FACU	10
Schoenoplectus tabernaemontani	Herbaceous	OBL	3

% Dominant species FAC or wetter: 50%

Prevalence Index: 3.4

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 3/3	100					LOAMY SAND
5-10	2.5Y 6/4	85	10YR 5/8	15	C	M	FINE SAND
10-17	10YR 6/6	90	7.5YR 6/3	10	C	M	FINE SAND

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 49

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/28/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **UPLAND NORTHEAST OF FLAG 'KPT-11'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	30
Prunus serotina	Tree	FACU	25
Quercus rubra	Tree	FACU	15
Liquidambar styraciflua	Sapling	FAC	10
Prunus serotina	Sapling	FACU	10
Quercus rubra	Sapling	FACU	5
Morella cerifera	Shrub	FAC	30
Liquidambar styraciflua	Shrub	FAC	10
Vitis rotundifolia	Herbaceous	FAC	15
Smilax glauca	Herbaceous	FAC	10
Vitis rotundifolia	Vine	FAC	25
Smilax glauca	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Diospyros virginiana	Tree	FAC	5
Ilex opaca	Shrub	FAC	5
Lonicera japonica	Herbaceous	FACU	5
Smilax rotundifolia	Vine	FAC	5

% Dominant species FAC or wetter: 67%

Prevalence Index: 3.3

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	2.5Y 3/2	100					FINE SAND
6-20	2.5Y 4/4	100					FINE SAND

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 50

Stantec

Project:	2017 SMR CAMP PENDLETON WETLAND DELINEATION		
Applicant:	VIRGINIA DEPARTMENT OF MILITARY AFFAIRS	Section/Township/Range:	N/A
City/County:	VIRGINIA BEACH	Subregion (LRR or MLRA):	T
State:	VIRGINIA	Site Latitude:	36.816431°
Investigator(s):	B. ASHLEY	Site Longitude:	-75.97849°
Date:	10/27/2017	Soil Map Unit Name:	DUCKSTON FINE SAND

Summary of Findings: **WETLAND SOUTH OF FLAG 'KPT-11'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: 10

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	35
Nyssa sylvatica	Tree	FAC	20
Nyssa sylvatica	Sapling	FAC	20
Liquidambar styraciflua	Sapling	FAC	10
Pinus taeda	Sapling	FAC	10
Vaccinium corymbosum	Shrub	FACW	15
Quercus rubra	Shrub	FACU	10
Woodwardia areolata	Herbaceous	OBL	40
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	10
Quercus phellos	Shrub	FACW	5
Juncus effusus	Herbaceous	OBL	10
Osmundastrum cinnamomeum	Herbaceous	FACW	5

% Dominant species FAC or wetter: 89%

Prevalence Index: 2.4

NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF CAREX (20%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	10YR 2/1	100					FINE SANDY LOAM
4-15	10YR 4/2	90	7.5YR 4/6	10	C	M	SANDY LOAM
15-20	2.5Y 3/2	85	7.5YR 4/6	15	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

June 27, 2018

PRELIMINARY JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2018-0436 (Lake Christine / Atlantic Ocean)

LTC Timothy Pillion, Garrison Commander
Camp Pendleton State Military Reserve
203 Red Horse Drive
Virginia Beach, Virginia
23451

Dear LTC Pillion:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as Camp Pendleton, located on a 332.01 acre parcel in Virginia Beach, Virginia.

The map entitled “Delineation Map”, by Stantec dated revised on 2018-06-15 provides the location(s) of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps’ 1987 Wetland Delineation Manual, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region,* and the positive indicators of wetland hydrology, hydric soils, hydrophytic vegetation and the presence of an ordinary high water mark. This letter is not confirming the Cowardin classifications of these aquatic resources.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the “Preliminary Jurisdictional Determination Form”. Please review the document, sign, and return one copy to me either via email (brian.c.denson@usace.army.mil) or via standard mail to US Army Corps of Engineers, Regulatory Office, and ATTN: Brian Denson, 803 Front Street Norfolk, Virginia 23510 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands can be relied upon for no more than five years from the date of this letter. New information may warrant revision.

If you have any questions, please contact me, either via telephone at (757) 201-7792 or via email at brian.c.denson@usace.army.mil.

Sincerely,

Brian Denson
Project Manager
Eastern Virginia Regulatory Section

Enclosure(s): Referenced figures, Supplemental Information, Preliminary Jurisdictional Determination Form

Site Data - SMR Camp Pendleton	
Study Area	304.04 Acres ±
Estuarine Emergent Intertidal Wetlands (E2EM)	0.40 Acres ±
Palustrine Forested Wetlands (PFO)	15.46 Acres ±
Palustrine Scrub-Shrub Wetlands (PSS)	0.26 Acres ±
Palustrine Emergent Wetlands (PEM)	1.73 Acres ±
Upper Perennial Stream Channels (R3)	0.01 Acres ± (244 L.F. ±)
Intermittent Stream Channels (R4)	0.02 Acres ± (272 L.F. ±)
Jurisdictional Ditches (R4)	0.08 Acres ± (1,757 L.F. ±)

Previously Delineated Site Data - Lake Christine	
Study Area	27.97 Acres ±
Wetlands	4.50 Acres ±
Open Waters	18.42 Acres ±
Jurisdictional Ditches	0.15 Acres ± (972 L.F. ±)

Site Data - Combined	
Study Area	332.01 Acres ±
Wetlands	22.35 Acres ±
Upper Perennial Stream Channels (R3)	0.01 Acres ± (244 L.F. ±)
Intermittent Stream Channels (R4)	0.02 Acres ± (272 L.F. ±)
Jurisdictional Ditches	0.23 Acres ± (2,729 L.F. ±)
Open Waters	18.42 Acres ±

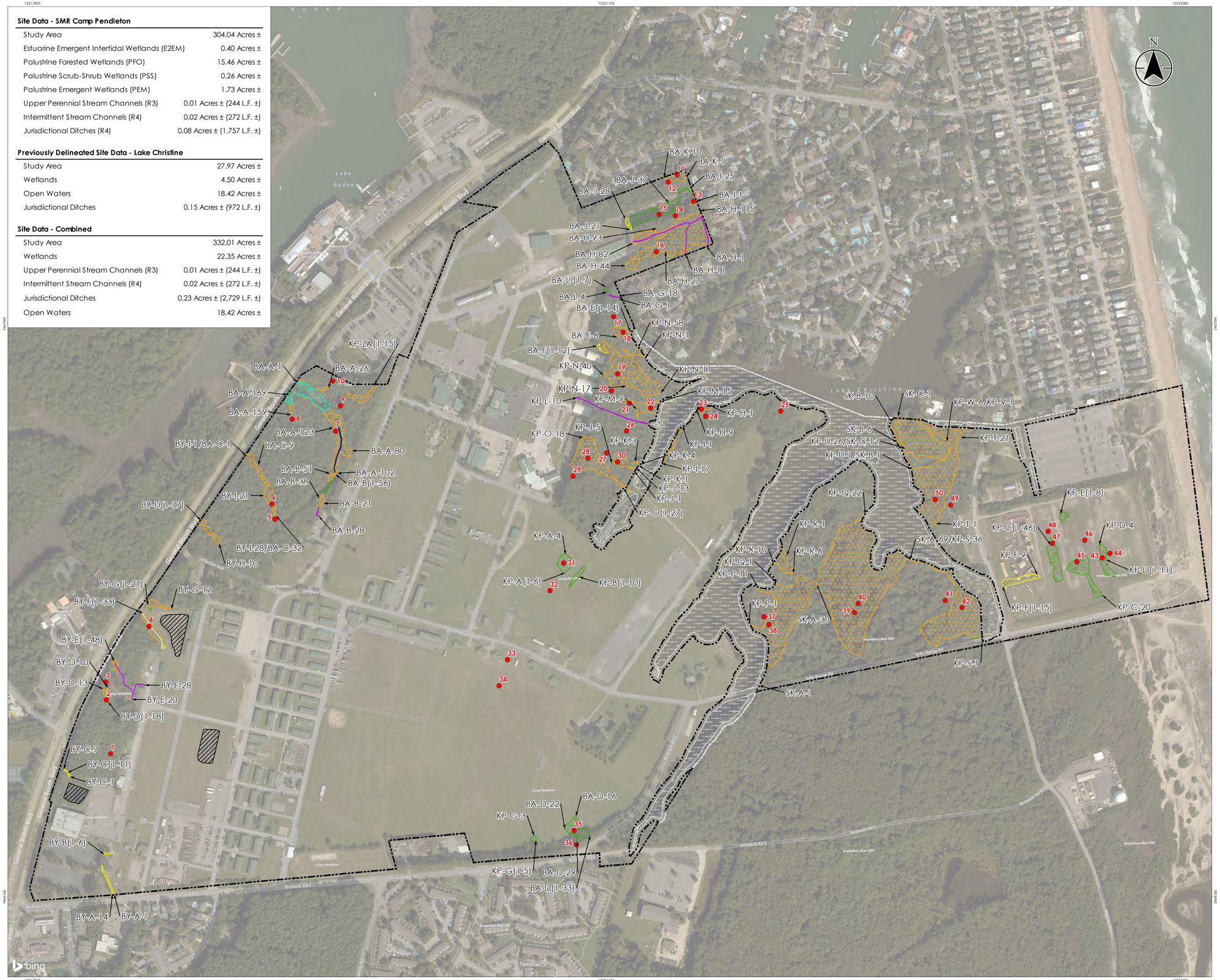


Figure No.
5

Title
Delineation Map

Map Date: 2018-03-05
Revised Date: 2018-06-15

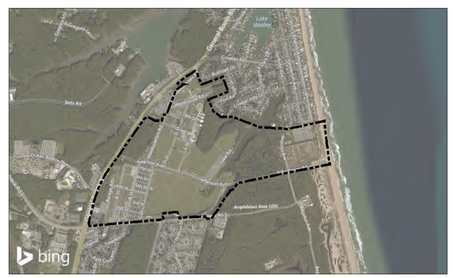
Client/Project
Commonwealth of Virginia
2017 SMR Camp Pendleton Wetland Delineation

Project Location
City of Virginia Beach, VA

203400975
Prepared by MGS on 2017-12-11
Technical Review by TPS on 2018-01-05
Independent Review by KHP on 2018-01-05

0 500 1,000 Feet
1:3,000 (At original document size of 24 x 36)

Legend
- Previously Delineated Study Area
- 2-Foot Contour
- Approximate Stormwater Facility
- Approximate Estuarine Emergent Intertidal Wetland Limits (E2EM)
- Approximate Jurisdictional Ditch Limits
- Approximate Palustrine Emergent Wetland Limits (PEM)
- Approximate Palustrine Forested Wetland Limits (PFO)
- Approximate Palustrine Scrub-Shrub Wetland Limits (PSS)
- Approximate Upper Perennial Stream Channel Limits (R3)
- Approximate Intermittent Stream Channel Limits (R4)
- Previously Delineated Jurisdictional Ditch
- Previously Delineated Open Water
- Previously Delineated Wetland Limits



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. The limits of waters of the U.S., including wetlands within the previously delineated study area, have been confirmed by the U.S. Army Corps of Engineers, Confirmation #NAO-2013-1616.
3. The limits of waters of the U.S., including wetlands, shown on this map have been field located by means of sub-meter capable GPS technology and are for planning purposes only.
4. Orthoimagery © Bing Maps
5. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

Stantec

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PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD):
Wednesday, June 27, 2018

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
LTC Timothy Pillion, Garrison Commander
Camp Pendleton State Military Reserve
203 Red Horse Drive
Virginia Beach, Virginia
23451

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: Camp Pendleton JD

FILE NUMBER: NAO-2018-0436

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: City: Virginia Beach

Center coordinates of site (lat/long in degree decimal format):

Latitude: 36.816431 ° N Longitude: -75.97849 ° W

Universal Transverse Mercator: WGS 84

Name of nearest waterbody: Lake Christine/Atlantic Ocean

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 3245 linear feet; width (ft); and/or 18.42 acres.

Cowardin Class: 3245 lf of R3, R4, and Ditches with OHW. 18.42 ac OW

Stream Flow: Perrenial and Intermittent and Open Waters

Wetlands: 22.35 acres

Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 5/25/2018

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

3. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☒ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☒ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☒ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey.

Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Google Earth, VGIN, CIR, Various Years

or ☒ Other (Name & Date): LIDAR

☒ Previous determination(s):

File no. and date of response letter: NAO-2013-1616 / September 23, 2013

☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

DENSON.BRIAN.C.1168799671

Digitally signed by DENSON.BRIAN.C.1168799671
DN: c=US, [illegible] ou=DoD, [illegible] ou=USA, cn=DENSON.BRIAN.C.1168799671
Date: 2018.06.25 16:20:14 -04'00'

Signature
Regulatory Project Manager
(REQUIRED)

2018-06-25
Date

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

6/27/18
Date

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

June 27, 2018

Supplemental Preapplication Information

Project Number: NAO-2018-0436
Applicant: LTC Timothy Pillion, Garrison Commander
Camp Pendleton State Military Reserve
Project Location: Camp Pendleton, Virginia Beach, VA.

1. A search of the Virginia Department of Historic Resources data revealed the following:

☐ No known historic properties are located on the property.

☐ The following known architectural resources are located on the property:

☐ The following known archaeological resources are located on the property:

☒ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

1) The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).

2) Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

VDHR Archaeological Resources

DHR ID	Site Name	Site Category	Time Period	NR Eligible	Restricted
44VB0387	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0388	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0389	-	Industry/Processing/Extraction, Military/Defense	Pre-Contact, World War I to World War II (1917 - 1945),	-	-

			The New Dominion (1946 - 1991)		
44VB0391	-	Domestic	Reconstruction and Growth (1866 - 1916)	-	-
44VB0390	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0386	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0385	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0392	-	Domestic	Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	-	-
44VB0343	Camp Pendleton ANG Site C-1	Military/Defense	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible	Restricted: No release
44VB0393	-	Domestic	Colony to Nation (1751 - 1789), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865),	-	-

			Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)		
44VB0394	-	Industry/Processing/Extraction, Military/Defense	Pre-Contact, Middle Woodland (300 - 999 C.E), Late Woodland (1000 - 1606), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0395	-	Industry/Processing/Extraction, Military/Defense	Pre-Contact, Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-
44VB0396	-	Military/Defense	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	-	-

3) VDHR Architectural Resources

DHR ID	Address	Restricted	Property Names
134-0413-0029	Jefferson Avenue	-	Building 84 - Camp Pendleton SMR (Current), Building T-84 - Camp Pendleton SMR (Historic)
134-0413-0092	Jefferson Avenue	-	Building 414 - Camp Pendleton SMR (Current), Building T-414 - Camp Pendleton SMR (Historic)

134-0413-0072	C Street	-	Building 349 - Camp Pendleton SMR (Current), Building T-349 - Camp Pendleton SMR (Historic)
134-0413-0071	6 Half Street, B Street, C Street	-	Building 348 - Camp Pendleton SMR (Current), Building T-348 - Camp Pendleton SMR (Historic)
134-0413-0030	E Street	-	Building 85 - Camp Pendleton SMR (Current), Building T-85 - Camp Pendleton SMR (Historic)
134-0413-0091	Jefferson Avenue	-	Building 413 - Camp Pendleton SMR (Current), Building T-413 - Camp Pendleton SMR (Historic)
134-0413-0073	7th Street, C Street	-	Building 350 - Camp Pendleton SMR (Current), Building T-350 - Camp Pendleton SMR (Historic)
134-0413-0090	Jefferson Avenue	-	Building 412 - Camp Pendleton SMR (Current), Building T-412 - Camp Pendleton SMR (Historic)
134-0413-0076	7th Street, C Street	-	Building 354 - Camp Pendleton SMR (Current), Building T-354 - Camp Pendleton SMR (Historic)
134-0413-0102	C Street, Jefferson Avenue	-	Building 434 - Camp Pendleton SMR (Current), Building T- 434 - Camp Pendleton SMR (Historic)
134-0413-0010	D Street, Jefferson Avenue	-	Building 57 - Camp Pendleton SMR (Current), Building T-57 - Camp Pendleton SMR (Historic)
134-0413-0075	7th Street, B Street, C Street, Jefferson Avenue	-	Building 353 - Camp Pendleton SMR (Current), Building T-353 - Camp Pendleton SMR (Historic)
134-0413-0093	D Street, Jefferson Avenue	-	Building 416 - Camp Pendleton SMR (Current), Building T-416 - Camp Pendleton SMR (Historic)
134-0413-0077	C Street, Jefferson Avenue	-	Building 355 - Camp Pendleton SMR (Current), Building T-355 - Camp Pendleton SMR (Historic)

134-0413-0028	E Street, Jefferson Avenue	-	Building 83 - Camp Pendleton SMR (Current)
134-0413-0099	D Street, Jefferson Avenue	-	Building 427 - Camp Pendleton SMR (Current), Building T- 427 - Camp Pendleton SMR (Historic)
134-0413-0098	Jefferson Avenue	-	Building 426 - Camp Pendleton SMR (Current), Building T- 426 - Camp Pendleton SMR (Historic), Chapel (Historic/Current)
134-0413-0162	D Street, Headquarters Road	-	Field between Headquarters Road and D Street - Camp Pendleton SMR (Function/Location)
134-0413-0011	D Street	-	Building 59 - Camp Pendleton SMR (Current), Building T-59 - Camp Pendleton SMR (Historic)
134-0413-0027	8th Street, D Street, E Street, Jefferson Avenue	-	Building 82 - Camp Pendleton SMR (Current), Building T-82 - Camp Pendleton SMR (Historic)
134-0413-0012	D Street	-	Building 60 - Camp Pendleton SMR (Current), Building T-60 - Camp Pendleton SMR (Current)
134-0413-0088	Headquarters Road	-	Building 410 - Camp Pendleton SMR (Current), Building T-410 - Camp Pendleton SMR (Historic)
134-0413-0013	D Street	-	Building 61 - Camp Pendleton SMR (Current), Building T-61 - Camp Pendleton SMR (Current)
134-0413-0196	D Street	Unrestricted	Building 61 Shed - Camp Pendleton SMR (Current)
134-0413-0185	D Street	-	Building 61Shed - Camp Pendleton SMR (Current)
134-0413-0014	D Street	-	Building 62 - Camp Pendleton SMR (Current), Building T-62 - Camp Pendleton SMR (Current)

134-0413-0106	Headquarters Road	-	Building 448 - Camp Pendleton SMR (Current), Building T- 448 - Camp Pendleton SMR (Historic)
134-0413-0015	D Street	-	Building 63 - Camp Pendleton SMR (Current), Building T-63 - Camp Pendleton SMR (Historic)
134-0413-0016	D Street	-	Building 64/T-64 - Camp Pendleton SMR (Current)
134-0413-0005	Headquarters Road	-	Building 13 - Camp Pendleton SMR (Current), Building T-13 - Camp Pendleton SMR (Historic)
134-0413-0017	8th Street, D Street	-	Building 65 - Camp Pendleton SMR (Current), Building T-65 - Camp Pendleton SMR (Historic)
134-0413-0018	8th Street, D Street	-	Building 66 - Camp Pendleton SMR (Current), Building T-66 - Camp Pendleton SMR (Historic)
134-0413-0019	8th Street, D Street	-	Building 67 - Camp Pendleton SMR (Current), Building T-67 - Camp Pendleton SMR (Historic)
134-0413-0004	Headquarters Road	-	Building 8 - Camp Pendleton SMR (Current)
134-0413-0169	Red Horse Drive	-	Red Horse Memorial - Camp Pendleton SMR (Current)
134-0413-0190	8th Street, D Street	-	Buildings 204 - Camp Pendleton SMR (Current)
134-0413-0089	Headquarters Road	-	Building 411 - Camp Pendleton SMR (Current), Building T-411 - Camp Pendleton SMR (Historic)
134-0413-0020	South Birdneck Road	Unrestricted	Building 69 - Camp Pendleton SMR (Current)

134-0413-0021	South Birdneck Road	Unrestricted	Building 73 - Camp Pendleton SMR (Current)
134-0413-0191	D Street	-	Buildings 205 - Camp Pendleton SMR (Current)
134-0413-0022	South Birdneck Road	Unrestricted	Building 74 - Camp Pendleton SMR (Current)
134-0413-0133	8th Street, D Street	-	Buildings 203 - Camp Pendleton SMR (Current)
134-0413-0006	Headquarters Road	-	Building 18 - Camp Pendleton SMR (Current), Building T-18 - Camp Pendleton SMR (Historic)
134-0413-0023	South Birdneck Road	Unrestricted	Building 75 - Camp Pendleton SMR (Current)
134-0413-0024	South Birdneck Road	Unrestricted	Building 76 - Camp Pendleton SMR (Current)
134-0413-0025	South Birdneck Road	Unrestricted	Building 77 - Camp Pendleton SMR (Current)
134-0413-0003	Headquarters Road	-	Building 4 - Camp Pendleton SMR (Current)
134-0413-0186	Headquarters Road	-	Shed-Building 4 - Camp Pendleton SMR (Current)
134-0413-0085	South Birdneck Road	-	Building 407- Camp Pendleton SMR (Current)
134-0413-0087	South Birdneck Road	-	Building 409- Camp Pendleton SMR (Current)

134-0413-0086	South Birdneck Road	-	Building 408 - Camp Pendleton SMR (Current)
134-0413-0084	South Birdneck Road	-	Building 405 - Camp Pendleton SMR (Current)
134-0413-0083	South Birdneck Road	-	Building 404 - Camp Pendleton SMR (Current)
134-0413-0131	7th Street, B Street	-	Picnic Area (Descriptive), Site 120 - Camp Pendleton SMR (Current)
134-0413-0151	4th Street	-	Building 326 - Camp Pendleton SMR (Current), Building T-326 - Camp Pendleton SMR (Historic)
134-0413-0054	5 Half Street, B Street	-	Building 331 - Camp Pendleton SMR (Current), Building T-331 - Camp Pendleton SMR (Historic)
134-0413-0059	5 Half Street, B Street	-	Building 336 - Camp Pendleton SMR (Current), Building T-336 - Camp Pendleton SMR (Historic)
134-0413-0064	6 Half Street, B Street	-	Building 341 - Camp Pendleton SMR (Current), Building T-341 - Camp Pendleton SMR (Historic)
134-0413-0069	6 Half Street, B Street	-	Building 346 - Camp Pendleton SMR (Current), Building T-346 - Camp Pendleton SMR (Historic)
134-0413-0050	4th Street, B Street, C Street	-	Building 327 - Camp Pendleton SMR (Current), Building T-327 - Camp Pendleton SMR (Historic)
134-0413-0055	5 Half Street, B Street, C Street	-	Building 332 - Camp Pendleton SMR (Current), Building T-332 - Camp Pendleton SMR (Historic)
134-0413-0060	5 Half Street, B Street, C Street	-	Building 337 - Camp Pendleton SMR (Current), Building T-337 - Camp Pendleton SMR (Historic)

134-0413-0065	6 Half Street, B Street, C Street	-	Building 342 - Camp Pendleton SMR (Current), Building T-342 - Camp Pendleton SMR (Historic)
134-0413-0070	6 Half Street	-	Building 347 - Camp Pendleton SMR (Current), Building T-347 - Camp Pendleton SMR (Historic)
134-0413-0074	B Street, Jefferson Avenue	-	Building 352 - Camp Pendleton SMR (Current), Building T-352 - Camp Pendleton SMR (Historic)
134-0413-0051	4th Street, B Street, C Street	-	Building 328 - Camp Pendleton SMR (Current), Building T-328 - Camp Pendleton SMR (Historic)
134-0413-0056	5 Half Street, B Street, C Street	-	Building 333 - Camp Pendleton SMR (Current), Building T-333 - Camp Pendleton SMR (Historic)
134-0413-0187	Headquarters Road	-	Tank (Current)
134-0413-0061	5 Half Street, B Street, C Street	-	Building 338 - Camp Pendleton SMR (Current), Building T-338 - Camp Pendleton SMR (Historic)
134-0413-0066	6 Half Street, B Street, C Street	-	Building 343 - Camp Pendleton SMR (Current), Building T-343 - Camp Pendleton SMR (Historic)
134-0413-0197	Headquarters Road	-	Map Kiosk (Descriptive), Structure 410a (Current)
134-0413-0053	C Street	-	Building 330 - Camp Pendleton SMR (Current), Building T-330 - Camp Pendleton SMR (Historic)
134-0413-0057	C Street	-	Building 334 - Camp Pendleton SMR (Current), Building T-334 - Camp Pendleton SMR (Historic)
134-0413-0058	C Street	-	Building 335 - Camp Pendleton SMR (Current), Building T-335 - Camp Pendleton SMR (Historic)

134-0413-0062	C Street	-	Building 339 - Camp Pendleton SMR (Current), Building T-339 - Camp Pendleton SMR (Historic)
134-0413-0063	C Street	-	Building 340 - Camp Pendleton SMR (Current), Building T-340 - Camp Pendleton SMR (Historic)
134-0413-0067	C Street	-	Building 344 - Camp Pendleton SMR (Current), Building T-344 - Camp Pendleton SMR (Historic)
134-0413-0068	C Street	-	Building 345 - Camp Pendleton SMR (Current), Building T-345 - Camp Pendleton SMR (Historic)
134-0413-0166	Jefferson Avenue	-	Mdular House 2- Camp Pendleton SMR (Current)
134-0413-0112	South Birdneck Road	Unrestricted	Building 86 - Camp Pendleton SMR (Current)
134-0413-0165	Jefferson Avenue	-	Modular Building 1 Camp Pendleton SMR (Current)
134-0413-0113	South Birdneck Road	Unrestricted	Building 87 - Camp Pendleton SMR (Current)
134-0413-0103	South Birdneck Road	Unrestricted	Building 435 - Camp Pendleton SMR (Historic)
134-0413-0031	Jefferson Avenue	-	Building 5 - Camp Pendleton SMR (Historic), Building 88 - Camp Pendleton SMR (Current), Building T-88 - Camp Pendleton SMR (Historic)
134-0413-0201	E Street, Jefferson Avenue	-	Building 101 - Camp Pendleton SMR (Current)
134-0413-0032	Jefferson Avenue	-	Building 4 - Camp Pendleton SMR (Historic), Building 89 - Camp Pendleton SMR (Current), Building T-89 - Camp Pendleton SMR (Historic)

134-0413-0205	Jefferson Avenue	-	Shed, Building T-89 - Camp Pendleton SMR (Current)
134-0413-0203	E Street, Jefferson Avenue	-	Building 100 - Camp Pendleton SMR (Historic/Current)
134-0413-0114	Lake Road, South Birdneck Road	-	Boathouse Associated with Building 94 (Descriptive), Building 91 - Camp Pendleton SMR (Current)
134-0413-0115	Lake Road and Jefferson Avenue	-	Dock Associated with Building 94 (Descriptive), Structure 91a - Camp Pendleton SMR (Current)
134-0413-0036	Jefferson Avenue, Lake Road	-	Adjutant General Cottage (Historic), Building 94 - Camp Pendleton SMR (Current), Post Superintendent Residence (Historic)
134-0413-0034	Jefferson Avenue	-	Building 33 - Camp Pendleton SMR (Historic), Building 93 - Camp Pendleton SMR (Historic), Building 92 - Camp Pendleton SMR (Current)
134-0413-0138	B Street	-	Building 230 - Camp Pendleton SMR (Current)
134-0413-0042	1st Street, B Street, C Street, South Birdneck Road	-	Building 233 - Camp Pendleton SMR (Current), Building T-233 - Camp Pendleton SMR (Historic)
134-0413-0041	1st Street, B Street, South Birdneck Road	-	Building 232 - Camp Pendleton SMR (Current), Building T-232 - Camp Pendleton SMR (Historic)
134-0413-0040	1st Street, B Street, South Birdneck Road	-	Building 231 - Camp Pendleton SMR (Current), Building T-231 - Camp Pendleton SMR (Historic)
134-0413-0105	South Birdneck Road	-	Building 442 - Camp Pendleton SMR (Current)
134-0413-0163	C Street, Jefferson Avenue, Rifle Range Road	-	Drill Field at Jefferson Avenue - Camp Pendleton SMR (Function/Location)

134-0413-0137	South Birdneck Road	Unrestricted	Building 229 - Camp Pendleton SMR (Current), Building 442 - Camp Pendleton SMR (Historic)
134-0413-0177	C Street	-	Gate/Guard House Camp Pendleton SMR (Current)
134-0413-0142	2nd Street	-	Building 238 - Camp Pendleton SMR (Current), Building T-238 - Camp Pendleton SMR (Historic)
134-0413-0139	2nd Street	-	Building 231A - Camp Pendleton SMR (Current)
134-0413-0150	Seatack Road	-	Cantonment Road 265 - Camp Pendleton SMR (Current), Seatack Road (Historic/Current)
134-0413-0141	2nd Street	-	Building 237 - Camp Pendleton SMR (Current), Building T-237 - Camp Pendleton SMR (Historic)
134-0413-0140	1st Street, B Street	-	Building 236 - Camp Pendleton SMR (Current), Building T-236 - Camp Pendleton SMR (Historic)
134-0413-0045	C Street	-	Building 243 - Camp Pendleton SMR (Current), Building T-243 - Camp Pendleton SMR (Historic)
134-0413-0044	B Street	-	Building 242 - Camp Pendleton SMR (Current), Building T-242 - Camp Pendleton SMR (Historic)
134-0413-0184	1st Street	-	Gazebo-Camp Pendleton SMR (Function/Location)
134-0413-0043	3rd Street, B Street	-	Building 241 - Camp Pendleton SMR (Current), Building T-241 - Camp Pendleton SMR (Historic)
134-0413-0144	B Street, C Street	-	Building 248 - Camp Pendleton SMR (Current), Building T-248 - Camp Pendleton SMR (Historic)

134-0413-0143	3rd Street, B Street, C Street	-	Building 247 - Camp Pendleton SMR (Current), Building T-247 - Camp Pendleton SMR (Historic)
134-0413-0183	1st Street	-	Gazebo-Camp Pendleton SMR (Function/Location)
134-0413-0046	3rd Street, B Street	-	Building 246 - Camp Pendleton SMR (Current), Building T-246 - Camp Pendleton SMR (Historic)
134-0413-0199	C Street	-	Cadets Memorial Garden- Camp Pendleton SMR (Current)
134-0413-0146	B Street, C Street	-	Building 253 - Camp Pendleton SMR (Current), Building T-253 - Camp Pendleton SMR (Historic)
134-0413-0145	B Street, C Street	-	Building 252 - Camp Pendleton SMR (Current), Building T-252 - Camp Pendleton SMR (Historic)
134-0413-0047	3rd Street, South Birdneck Road	-	Building 251- Camp Pendleton SMR (Current), Building T-251 - Camp Pendleton SMR (Historic)
134-0413-0164	1st Street, 7th Street, A Street, B Street	-	Field between A and B Streets - Camp Pendleton SMR (Function/Location), Regimental Camp Area #2 (Descriptive)
134-0413-0111	Jefferson Avenue, South Birdneck Road	-	Structure 80 - Camp Pendleton SMR (Current), Structure T-80 - Camp Pendleton SMR (Historic)
134-0413-0033	Lake Road	-	Building 90 - Camp Pendleton SMR (Descriptive), Commandant's House (Historic), Governor's Cottage (Historic/Current)
134-0413-0009	C Street	-	Building 51 - Camp Pendleton SMR (Current)
134-0413-0007	B Street	-	Building 34 - Camp Pendleton SMR (Current)

134-0413-0198	Lake Road	-	Building 90 Shed - Camp Pendleton SMR (Current), Governor's Cottage Shed (Descriptive)
134-0413-0008	B Street	-	Building 35 - Camp Pendleton SMR (Current)
134-0413-0204	B Street	-	Building 36 - Camp Pendleton SMR (Historic/Current), Camp Pendleton Laundry (Function/Location)
134-0413-0052	C Street	-	Building 329 - Camp Pendleton SMR (Current), Building T-329 - Camp Pendleton SMR (Historic)
134-0413	501 General Booth Boulevard	Unrestricted	Camp Pendleton-National Guard Training Site (Historic), Camp Pendleton/State Military Reservation (Current Name), Camp Pendleton/State Military Reservation Historic District (NRHP Listing)
134-0413-0149	Jefferson Avenue	-	Cantonment Road 264 - Camp Pendleton SMR (Current), Jefferson Avenue (Historic/Current)
134-0413-0037	Lake Road	-	Building 99 - Camp Pendleton SMR (Current), Building T-95 - Camp Pendleton SMR (Historic)
134-0413-0130	Jefferson Avenue, Lake Road	-	Picnic Area (Descriptive), Site 119 - Camp Pendleton SMR (Current)
134-0413-0206	Lake Road	-	Dock 99A - Camp Pendleton SMR (Function/Location)
134-0413-0122	Lake Road	-	Building 110b - Camp Pendleton SMR (Current)
134-0413-0035	Birdneck Road	-	Bldg #32 State Military Reservation, Camp Pendleton (Historic), Bldg #92 State Military Reservation, Camp Pendleton (Historic), Horse Barn, Bldg #93 State Military Reservation, Camp Pendleton (Function/Location)

134-0413-0117	Lake Road and Jefferson Avenue	-	Building 94a - Camp Pendleton SMR (Current), Guest House #1 (Descriptive)
134-0413-0123	Lake Road	-	Structure 110c - Camp Pendleton SMR (Current)
134-0413-0121	Lake Road	-	Building 110a - Camp Pendleton SMR (Current)
134-0413-0116	Lake Road and Jefferson Avenue	-	Building 94b - Camp Pendleton SMR (Current), Guest House #2 (Descriptive)
134-0413-0188	Lake Road and Jefferson Avenue	-	Building 94c - Camp Pendleton SMR (Current)
134-0413-0038	Lake Road	-	Adj. General Residence (Current), Building 110 - Camp Pendleton SMR (Current), Building T-110 - Camp Pendleton SMR (Historic)
134-0413-0124	Lake Road	-	Structure 110d - Camp Pendleton SMR (Current)
134-0413-0189	Lake Road and Jefferson Avenue	-	Building 94d Shed - Camp Pendleton SMR (Current)
134-0413-0160	General Booth Boulevard, Regulus Avenue, South Birdneck Road	-	Beachfront Range - Camp Pendleton SMR (Current)
134-0413-0039	Regulus Avenue	-	Building 113 - Camp Pendleton SMR (Current), Building 99 - Camp Pendleton SMR (Historic)
134-0413-0125	Regulus Road	-	Building 114 - Camp Pendleton SMR (Current)
134-0413-0127	Regulus Road	-	Building 116 - Camp Pendleton SMR (Current)

134-0413-0126	Regulus Road	-	Building 115 - Camp Pendleton SMR (Current)
134-0413-0218	Regulus Road	-	Building 114a - Camp Pendleton SMR (Current)
134-0413-0128	Regulus Road	-	Building 117 - Camp Pendleton SMR (Current)
134-0413-0132	Regulus Road	-	Structure 127 - Camp Pendleton SMR (Current)
134-0413-0129	Regulus Road	Unrestricted	Structure 118 - Camp Pendleton SMR (Current), Structure T-100 - Camp Pendleton SMR (Historic)
134-0413-0179	Regulus Road	-	Dog Agility Course- Camp Pendleton SMR (Current)
134-0413-0170	Rifle Range Road	-	Beach - Camp Pendleton SMR (Current)
134-0413-0168	Rifle Range Road	-	Observation Deck - Camp Pendleton SMR (Current)
134-0413-0167	501 General Booth Boulevard	-	Circulation System - Camp Pendleton SMR (Current)
134-0413-0155	Garage Road	Unrestricted	Building T-430 - Camp Pendleton SMR (Current)
134-0413-0156	Garage Road	Unrestricted	Camp Pendleton Water Tower (Descriptive), Structure 430c - Camp Pendleton SMR (Function/Location)
134-0413-0152	A Street	Unrestricted	Building 361 - Camp Pendleton SMR (Current), Building T-356 - Camp Pendleton SMR (Historic)

134-0413-0095	South Birdneck Road	Unrestricted	Building 418, Camp Pendleton SMR (Current)
134-0413-0097	Warehouse Road	Unrestricted	Building 424 - Camp Pendleton SMR (Current), Building T-424 - Camp Pendleton SMR (Historic)
134-0413-0161	Jefferson Avenue, Lake Road	-	Rifle Range, Jefferson Avenue and Lake Road - Camp Pendleton SMR (Function/Location)
134-0413-0171	D Street	-	Building Foundation-Camp Pendleton SMR (Current)
134-0413-0192	D Street	-	Buildings 206 - Camp Pendleton SMR (Current)
134-0413-0134	D Street	-	Building 209 - Camp Pendleton SMR (Current)
134-0413-0101	E Street	-	Building 432 - Camp Pendleton SMR (Current), Building T- 432 - Camp Pendleton SMR (Historic)
134-0413-0026	South Birdneck Road	Unrestricted	Building 79 - Camp Pendleton SMR (Current)
134-0413-0209	E Street	-	Building 432 Shed - Camp Pendleton SMR (Current), Building T- 432 Shed- Camp Pendleton SMR (Historic)
134-0413-0118	South Birdneck Road	-	Building 95 - Camp Pendleton SMR (Current)
134-0413-0119	E Street, Jefferson Avenue	-	Building 96 - Camp Pendleton SMR (Current)
134-0413-0216	9th & D Streets	-	Building 212 - Camp Pendleton SMR (Current)

134-0413-0120	E Street, Jefferson Avenue	-	Building 97 - Camp Pendleton SMR (Current)
134-0413-0200	E Street, Jefferson Avenue	-	Building 98 - Camp Pendleton SMR (Current)
134-0413-0215	9th & D Streets	-	Building 216 - Camp Pendleton SMR (Current)
134-0413-0181	9th Street	-	Quonset Hut, Red Horse Complex - Camp Pendleton SMR (Current)
134-0413-0136	9th Street	-	Building 211 - Camp Pendleton SMR (Current)
134-0413-0202	E Street, Jefferson Avenue	-	Building 102 - Camp Pendleton SMR (Current)
134-0413-0193	D Street	-	Buildings 207 - Camp Pendleton SMR (Current)
134-0413-0135	D Street	-	Building 210 - Camp Pendleton SMR (Current)
134-0413-0182	9th Street	-	Quonset Hut, Red Horse Complex - Camp Pendleton SMR (Current)
134-0413-0194	9th Street	-	Building 208 - Camp Pendleton SMR (Current)
134-0413-0195	9th & D Streets	-	Building 214 - Camp Pendleton SMR (Current)
134-0413-0100	Headquarters Road, Warehouse Road	-	Building 428 - Camp Pendleton SMR (Current), Building T- 428 - Camp Pendleton SMR (Historic)

134-0413-0002	Headquarters Road, Warehouse Road	-	Building 3 - Camp Pendleton SMR (Current)
134-0413-0001	Headquarters Road, Warehouse Road	-	Building 2 -Camp Pendleton SMR (Current)
134-0413-0110	Headquarters Road, Warehouse Road	-	Building 1 - Camp Pendleton SMR (Current)
134-0413-0174	Headquarters Road	-	Structure 423 - Camp Pendleton SMR (Current)
134-0413-0096	Headquarters Road, Warehouse Road	-	Building 421 - Camp Pendleton SMR (Current), Building T-421 - Camp Pendleton SMR (Historic)
134-0413-0104	Headquarters Road, Warehouse Road	-	Building 441 - Camp Pendleton SMR (Current), Building T- 441 - Camp Pendleton SMR (Historic)
134-0413-0217	Headquarters Road	-	Building 217 - Camp Pendleton SMR (Current)
134-0413-0154	South Birdneck Road	-	Building 422 - Camp Pendleton SMR (Current), Building T-422 - Camp Pendleton SMR (Historic)
134-0413-0159	1096 South Birdneck Road	Unrestricted	Major General William Sands Armory (Current), Virginia Beach Armory (Current), Virginia Beach Readiness Center (Current)
134-0413-0148	Garage Road	-	Building 261 - Camp Pendleton SMR (Current)
134-0413-0048	Garage Road	-	Building 262 - Camp Pendleton SMR (Current), Building T-262 - Camp Pendleton SMR (Historic)
134-0413-0049	Garage Road, South Birdneck Road	-	Building 263 - Camp Pendleton SMR (Current), Building T-263 - Camp Pendleton SMR (Historic)

134-0413-0080	Garage Road	-	Building 360 - Camp Pendleton SMR (Current), Building T-360 - Camp Pendleton SMR (Historic)
134-0413-0172	Garage Road	-	Building Foundation and Flue-Camp Pendleton SMR (Descriptive)
134-0413-0081	Garage Road	-	Building 362 - Camp Pendleton SMR (Current), Building T-362 - Camp Pendleton SMR (Historic)
134-0413-0212	4th Street	-	Building 260D - Camp Pendleton SMR (Current)
134-0413-0147	A Street, Garage Road	-	Building 260 - Camp Pendleton SMR (Current)
134-0413-0214	A Street	-	Building 260 - Camp Pendleton SMR (Current)
134-0413-0208	A Street	-	Building 260B-C (Function/Location)
134-0413-0173	4th Street, Garage Road	-	Structure 361-Camp Pendleton SMR (Historic)
134-0413-0082	A Street, South Birdneck Road	-	Building 403 - Camp Pendleton SMR (Current)
134-0413-0211	4th Street	-	Building 360A - Camp Pendleton SMR (Current)
134-0413-0078	A Street	-	Building 358 - Camp Pendleton SMR (Current), Building T-358 - Camp Pendleton SMR (Historic)
134-0413-0079	A Street	-	Building 359 - Camp Pendleton SMR (Current), Building T-359 - Camp Pendleton SMR (Historic)

134-0413-0175	A Street	-	A Street Marker- Camp Pendleton SMR (Current), Rose Marker (Descriptive)

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

   ☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

   ☒ The following federally-listed species may occur within the vicinity of the subject property: Northern Long Eared Bat

   ☐ The following state-listed (or other) species may occur within the vicinity of the subject property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

Wetland Delineation Report – Naval Air Station Oceana

Coastal Virginia Offshore Wind Project,
Virginia Beach, Virginia

March 2021

Project No.: 0522898

The business of sustainability

ERM

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CONTENTS

List of Tables

Acronyms and Abbreviations

CFR	Code of Federal Regulations
ERM	Environmental Resources Management
FAC	Facultative Plants
FACU	Facultative Upland Plants
FACW	Facultative Wetland Plants
GIS	Geographic Information Systems
GPS	Global Positioning System
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OBL	Obligate Wetland Plants
OHWM	Ordinary High Water Mark
PEM	Palustrine System Emergent Wetland Class
PFO	Palustrine Forested Wetland Class
Project	Oceana Project
PSS	Palustrine System Scrub-Shrub Wetland Class
Site	Oceana Project
UPL	Upland Plants
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

1. INTRODUCTION

On behalf of Dominion Energy, Environmental Resources Management (ERM) conducted a wetland and waterbody delineation on U.S. Navy lands at Naval Air Station Oceana for the proposed Coastal Virginia Offshore Wind Project ("Project") in Virginia Beach, Virginia. The approximately 42-acre survey area ("Site") is located east of Oceana Boulevard (Route 615) and south of Bells Road, and is accessed from Oceana Boulevard via a gravel road. This report provides a description of the environmental setting of the Site, the methodology utilized for the wetland and waterbody delineation, and the results of the survey.

1.1 ENVIRONMENTAL SETTING

The Site is located within the Coastal Plain Province in Virginia's Tidewater region, and falls within the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map Princess Anne, Virginia (Figure 1). The Site consists of active and open agricultural fields comprised of soy beans (*Glycine max*) within a network of excavated drainage ditches intended to improve drainage over the relatively flat landscape. At the time of the survey, the soy had been harvested. Narrow patches of forested upland comprised of hardwood and evergreen species are scattered throughout the survey area, which also contained small piles of tires and other household debris at the time of survey.

A majority of the Site has a convex landscape, which is typical of uplands; however, ERM observed a depressed area containing household debris, trash, and pieces of concrete/asphalt within the northwest corner of the Site, adjacent to the intersection of Oceana Boulevard and Bells Road. Vegetation in this area included autumn olive (*Elaeagnus umbellata*), which is indicative of a disturbed area and does not have a wetland indicator status.

1.1.1 Physiography, Geology, and Geomorphology

The Site is located within the Outer Coastal Plain sub-province of the Coastal Plain physiographic province. Virginia's Coastal Plain is bordered by the Fall Line to the west and by the Atlantic Ocean and Chesapeake Bay and its tributaries to the east. This is the youngest of the physiographic provinces, formed by sediments eroded from the Appalachian Highlands and deposited along the Atlantic shoreline. The Coastal Plain varies in topography from north to south. The northern Coastal Plain consists of three peninsulas formed between the four major tributaries of Chesapeake Bay: the Potomac, the Rappahannock, the York, and the James Rivers. In the north, the Northern Neck is somewhat hilly and well drained. Further south across the Middle Peninsula and Lower Peninsula the topography flattens, until south of the James River the landscape is nearly level. The Eastern Shore, separated from the mainland by the Chesapeake Bay, exhibits little topographic relief. These subtle differences in topography and the variety of fresh, brackish, and saltwater systems from ocean and inland bays to rivers, ponds, and bogs, have contributed to the wide variety of natural communities found on the Coastal Plain. (VADCR 2019).

1.1.2 Hydrology

The Site is located within the Lower Chesapeake Watershed and sub-watershed of Eastern Lower Delmarva (HUC 02040304). A large wetland complex was previously delineated in 2016 by the Navy (Appendix A) in a forested area located east of the Site. According to the Federal Emergency Management Agency's National Flood Hazard Layer, the entirety of the Project Site is located within Zone X (unshaded): *areas of minimal flooding* (FEMA 2009).

1.1.3 Soils

Table 1-1 provides a list of the types of soil series mapped by the U.S. Department of Agriculture, Natural Resource Conservation Service (USDA NRCS) on the Site. Figure 1 (Appendix B) depicts the distribution of the soil series. The Site contains six major soil types. Of these, Bojac (7), Dragston (13), and Munden (19), are the dominant soil types present, accounting for about 96.5 percent of the Site. These soil types, which are not considered hydric, are described below:

- The Bojac and Dragston series consists of deep, well drained and or gravelly soils. These soils have a high rate of water transmission. Bojac and Dragston soils are on marine terraces and have slopes of 0 to 2 percent (NRCS 2017).
- The Munden series have moderately fine texture to moderately coarse texture with a moderate infiltration rate when thoroughly wet. These soils are on marine terraces and prime farmland. Slopes are 0 to 2 percent (NRCS 2017).

The remaining soil types present, Nimmo (24), Tomoteley (38), and Udorthents (40), account for about 3.5 of the Site. These soils, which are considered hydric, occur along the eastern boundary of the Site adjacent to the forested area to the east noted above (NRCS 2017).

As described above, most of the Site is currently disturbed by agricultural activities.

Table 1-1: USDA NRCS Soil Series Mapped Onsite [1]

Map Unit	Map Unit Name	Total Acres	% of Total
7	Bojac fine sandy loam, 0 to 2 percent	13.1	31.0
13	Dragston fine sandy loam, 0 to 2 percent	12.5	29.6
19	Munden fine sandy loam, 0 to 2 percent	15.0	35.5
24	Nimmo loam, 0 to 2 percent	0.1	0.2
38	Tomoteley loam, 0 to 2 percent	0.2	0.5
40	Udorthents, loamy, 0 to 25 percent	1.3	3.1

1.1.4 Vegetation

The vegetation on the Site consists of agriculture soy. The excavated drainage ditches are vegetated with herbaceous cover, including patches of early yellowrocket (*Barbarea verna*), pale dock (*Rumex altissimus*), and goose grass (*Eleusine indica*). The scattered forested patches are dominated by several native species, including southern live oak (*Quercus virginiana*), sweetgum (*Liquidambar styraciflua*), and American holly (*Ilex opaca*) with the common invasive species of autumn olive (*Elaeagnus umbellata*) in the shrub layer.

2. METHODS

2.1 DESKTOP REVIEW

Prior to conducting field surveys, ERM reviewed high-resolution aerial photography and Geographic Information System (GIS) data including the U.S. Fish and Wildlife Service (USFWS) National Wetlands

[1] The sum of the percentages in this table is 99.9% due to rounding.

Inventory (NWI), National Hydrography Dataset (NHD), Natural Resource Conservation Service Web Soil Survey, and USGS topographic maps. These resources were used both prior to and during field surveys to identify potential wetland or waterbody areas.

2.1.1 Aerial Photography

High resolution aerial imagery was reviewed to assist in evaluating the Site for possible wetland signatures and recent disturbances on the landscape that could influence the presence and extent of wetlands. Possible visual signatures include, but are not limited to, surface water, varying color and texture changes in vegetation, and isolated areas within farmland that are not successfully farmed due to poor drainage.

2.1.2 National Wetland Inventory

NWI data (USFWS 2020) were overlaid on high-resolution aerial imagery and reviewed in conjunction with soils surveys and topographic maps. NWI data are subject to limitations associated with the aerial photo interpretation completed to map wetlands; therefore, these data are used as a guide to identify potential wetlands. Maps that illustrated NWI wetland polygons were provided to field crews to help guide targeted field surveys at and near the Site.

2.1.3 Soil Survey

The NRCS Web Soil Survey was used to obtain soil survey information for the Site. Soil maps were used as a guide to identify locations of potential hydric soils on the Site. Field investigation was required to verify the presence of hydric soils, particularly given the disturbed conditions present throughout much of the Site. Figure 1 (Appendix B) presents the soil types mapped onsite.

2.1.4 National Hydrography Dataset

The NHD depicts surface waters across the United States, including some, but not all, rivers, streams, canals, lakes, and ponds. The data are provided at a scale of 1:24,000. Not all water features are shown at this scale, and those that are provide only a moderate level of detail. The NHD layer includes data for perennial, intermittent, and ephemeral streams as well as artificial paths, canals/ditches, coastlines, connectors, pipelines, and underground conduit (USGS 2019).

2.1.5 Site Assessment

The Site was evaluated using the above desktop resources to determine the potential presence of wetlands, waterbodies (streams and ponds), and non-tidal ditches. Data were also collected to document a lack of water features where desktop data, such as NWI polygons, indicated water features may be present but no such features were identified during the field survey. These were referred to as non-water points. Each water resource documented within the Site was assigned a Project-specific unique identifier or Unique ID. Specific naming conventions were followed during field surveys to catalog each wetland and waterbody documented. Table 2-1 describes each part of the naming convention that comprise the Unique IDs for non-water points identified during field surveys. These naming conventions are used in the results summary table (Table 3-1) and the non-water data sheets provided in Appendix C.

Table 2-1: Naming Protocol for Unique ID

Water Resource	Type	Field Crew Letter	Feature Number
Non-water Point	no = non-water	crew letter (e.g., a, b, c)	001, 002, 003, …

2.2 FIELD SURVEY

On January 21, 2021, ERM performed a field survey to determine if wetlands or waterbodies are present onsite. The Site was surveyed with a transect spacing of 5 to 10 feet between delineators. Field data observation points and non-water points were recorded using a Trimble® 7000 series GeoXH model global positioning system (GPS) unit. The field data collection settings within the GPS units used a sufficient number of available satellites to capture location data. Note that while the GPS data collected during survey provides reasonably accurate spatial information capable of collecting sub-meter accuracy with sufficient satellite reception, it does not constitute the same accuracy as a professional land survey.

2.2.1 Wetlands

Field surveys were based on the wetland delineation methodologies as described in the U.S. Army Corps of Engineers 1987 Manual (1987 Manual; USACE 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain* (Version 2.0; USACE November 2010) with use of the *National Wetland Plant List: 2018* (USACE 2018) for determination of plant indicator status, and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979) to help determine if wetlands are onsite. According to the 1987 Manual, three criteria or parameters are considered during a wetland delineation. For an area to be considered a wetland it must have:

- A predominance of hydrophytic vegetation;
- Indications of wetland hydrology; and
- The presence of hydric soils under normal circumstances (i.e., where naturally problematic conditions or disturbances are absent).

2.2.1.1 Hydrophytic Vegetation

The 1987 Manual and National Wetland Plant List define the wetland indicator status of plants as follows:

- Obligate Wetland Plants (OBL): almost always occur in wetlands (estimated probability >99 percent) under natural conditions. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.
- Facultative Wetland Plants (FACW): usually occur in wetlands (estimated probability >67 percent to 99 percent), but may occur in non-wetlands. These plants predominantly occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
- Facultative Plants (FAC): occur in wetlands and uplands (estimated probability 33 to 99 percent within wetlands). These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation. They have a wide tolerance of soil moisture conditions.
- Facultative Upland Plants (FACU): usually occur in uplands, but many occur in wetlands (estimated probability 1 percent to <33 percent in wetlands). These plants predominantly occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
- Upland Plants (UPL): almost never occur in wetlands (estimated probability <1 percent). These plants occupy mesic to xeric upland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Dominant vegetation was assessed for each stratum present (tree, sapling/shrub, woody vine, and herbaceous) at a sample point location. In most cases, plant dominance was determined using the "50/20 Rule" in which species from each stratum that individually or collectively make up more than 50 percent of the total cover in each stratum, plus any other species that account for at least 20 percent of the total cover in the stratum, are determined to be dominant species. The hydrophytic vegetation criterion is met when more than 50 percent of the dominant plant species are classified as OBL, FACW, or FAC. Vegetation information was recorded on the appropriate wetland datasheets (Appendix C).

2.2.1.2 Wetland Hydrology

Hydrology is influenced by many variables, including seasonal and long-term rainfall patterns, local geology, topography, soil type, local water table conditions, and drainage. According to the 1987 Manual and the Regional Supplement, wetland hydrology is present if 14 or more consecutive days of inundation or water saturation within 12 inches of the soil surface occur during the growing season at a minimum frequency of 5 in 10 years.

Indicators of wetland hydrology provide evidence that a site has a persistent wetland hydrologic regime. The Regional Supplement provides a list of hydrology indicators that include primary and secondary indicators, which are grouped as:

- Observation of Surface Water or Saturated Soils
- Evidence of Recent Inundation
- Evidence of Current and Recent Soil Saturation
- Evidence of Other Site Conditions or Data

One primary indicator or two secondary indicators are required to confirm that wetland hydrology is present or occurs at some time during the growing season. Field observations of hydrology were made at each vegetation community sample point. Examples of key indicators observed include presence of surface water, high water table (≤12 inches from surface) within the hole dug for soil observations, saturated soil in the upper portion of the soil profile, water-stained leaves, drainage patterns as evidence of water presence, and the geomorphic position of the vegetation community and sample point location. Hydrology information was recorded on the appropriate wetland datasheet (Appendix C).

2.2.1.3 Hydric Soils

Hydric soils are characterized by specific morphological characteristics developed in the soil profile over time due to reduction of iron, manganese, and sulfur under saturated and anaerobic conditions (NRCS 2018). The 1987 Manual defines hydric soils as soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The hydric soil indicators described in the Regional Supplement are a subset of hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 8.*2 (USDA NRCS 2018). The *Munsell Book of Soil Color Charts (Munsell 2015)* was used to determine soil matrix, concentration, depletion and mottle colors, in order to record the soil profile descriptions. The soils were observed and documented at representative sample point locations in both wetland communities and adjacent upland communities to help establish the wetland boundary. Soil profile descriptions were made at each sample point and recorded on the appropriate wetland datasheet (Appendix C).

2.2.1.4 Cowardin Classification

The Cowardin Classification was developed in 1979 to classify a variety of wetland habitats and divides wetlands into five systems: marine, estuarine, riverine, lacustrine, and palustrine (Cowardin 1979). These represent the five major landscape settings in which wetlands are located. The classification system further divides wetland communities into systems and classes. The current survey was conducted in

inland wetlands. Descriptions of the common Cowardin Classification inland community types are described below.

- Palustrine System Emergent Wetland Class (PEM): A PEM wetland is defined as a non-tidal wetland characterized by erect, rooted, hydrophytic herbaceous species. These wetland habitats are often dominated by perennial plants, where the vegetation is present for the majority of the growing season.
- Palustrine System Scrub-Shrub Wetland Class (PSS): A PSS wetland is defined as a non-tidal wetland consisting of woody vegetation that is less than 20 feet tall, including shrubs, young trees, and stunted trees or shrubs.
- Palustrine Forested Wetland Class (PFO): A PFO wetland is defined as a non-tidal wetland characterized by dominant woody vegetation that is greater than 20 feet tall, with an understory of small trees and shrubs, as well as an herbaceous layer.

Each wetland delineated was assigned a Cowardin class. For wetland complexes, or wetlands that are comprised of more than one wetland plant community (i.e., Cowardin class) a sample point was established and observations were recorded to document each community.

2.2.2 Waterbodies

Waterbodies documented during the field survey were assigned a Unique ID according to their flow and hydrology regimes: linear or flowing waterbodies, such as streams and rivers, were assigned a unique ID starting with an “s”; non-flowing open waterbodies, such as ponds and lakes, were assigned a unique ID starting with an “o.” Linear or flowing waterbodies were identified as landscape features with a channel that include a bed and a bank in a concave landscape position where water flow has resulted in a feature that possesses an ordinary high water mark (OHWM). Waterbodies do not include erosional features, such as gullies, rills, or ditches, in accordance with the USACE Regulatory Guidance Letter regarding Ordinary High Water Mark Identification (USACE 2005).

Based on evidence of flow regime at the time of survey, linear waterbodies were attributed a flow regime according to the definitions provided by USACE for the Nationwide Permit Program in Title 33 Code of Federal Regulations (CFR) Part 328 & 329. Non-flowing, open waterbody features were assigned a Cowardin hydrology regime based on observations recorded at the time of survey. Definitions of these flow and hydrology regimes are included below, as defined in Title 33 CFR Part 328.

- Perennial Stream: has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year and groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
- Intermittent Stream: has flowing water during most times of the year when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water and runoff from rainfall is a supplemental source of water for stream flow.
- Ephemeral Stream: has flowing water only during and for a short duration after precipitation events. Ephemeral stream beds are located above the water table year-round; therefore, groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Non-flowing or open waterbodies were documented based on the evidence of inundation/saturation at the time of surveys, utilizing one of four categories based on the Cowardin classification including the following:

- Non-flowing: water covers the land surface throughout the year in all years.

- Semi-non-flowing: surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
- Seasonally flooded: surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.
- Temporarily flooded: surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

2.2.3 Non-Tidal Ditches

Ditches include waters that are constructed in tributaries or are relocated tributaries or, in certain circumstances, drain wetlands, or clearly function as a tributary. Ditches do not include erosional features, such as gullies, rills, and ephemeral streams that do not have a bed and banks and OHWM (U.S. Environmental Protection Agency [EPA] 2015). Stormwater features include structural or engineered control devices to treat or store polluted stormwater (EPA 2007).

Field crews documented these features as they had OHWM, bed and bank and connected to waters of the United States offsite. Ditches that exhibited wetland characteristics were classified as wetlands if they met the three parameters specified in the 1987 Manual or applicable Regional Supplement.

2.2.4 Non-Water Points

Non-water points were collected to document areas mapped as NWI polygons or NHD lines that did not meet the required criteria of wetlands or waterbodies (i.e., upland habitat). Non-water points were also used to document areas that were investigated as potentially meeting wetland criteria, but were ultimately determined to be non-wetland areas during the field investigation. Observations were recorded, photographs were taken, and a GPS point was collected at each non-water point. Wetland delineation datasheets were used to record information for non-water points (Appendix C).

3. RESULTS

On January 21, 2021, ERM surveyed the Site for the presence and extent of wetlands and waterbodies. Weather conditions during the fieldwork were typical for this time of year, and the entire Site was observed dry. No wetland or waterbody features were recorded indicating that use of the Site for the Project will not affect jurisdictional surface water features.

Four non-tidal/non-water ditches, cumulatively measuring 0.19 acres (approximately 0.5 percent of the survey area), were observed within the Site (Appendix B, Figure 2). Summary information on these features is provided in Table 3-1 below. Datasheets with photos of each ditch are provided in Appendix C. In ERM's opinion, the ditches do not represent jurisdictional surface water features.

As noted in Section 1.1 above, ERM observed a depressed area containing household debris, trash, and pieces of concrete/asphalt within the northwest corner of the Site, adjacent to the intersection of Oceana Boulevard and Bells Road. Vegetation in this area included autumn olive (*Elaeagnus umbellata*), which does not have a wetland indicator status. A data sheet for this area is provided in Appendix C, with summary information provided in Table 3-2 below.

Table 3-1: Delineated Non-Tidal/Non-Water Ditches

Unique ID	Vegetation	Soils	Hydrology	Non-tidal ditch Area (Acres)	Latitude	Longitude	Wetland Classification Y/N
noa001	No hydrophytic vegetation indicators present	No hydric soil indicators present	No primary or secondary hydrology indicators present and no surface water, saturation, or water table present	0.045	36.81389	-76.00483	N
noa002				0.072	36.81662	-76.00549	N
noa003				0.049	36.81824	-76.00411	N
noa004				0.024	36.81776	-76.00599	N

Table 3-2: Data for Northwest Corner of Survey Area

Unique ID	Vegetation	Soils	Hydrology	Latitude	Longitude	Wetland Classification Y/N
noa005	No hydrophytic vegetation indicators present	No hydric soil indicators present	No primary or secondary hydrology indicators present and no surface water, saturation, or water table present	36.81893	-76.00737	N

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APPENDIX A 2016 PRELIMINARY JURISDICTIONAL DETERMINATION

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

MAY 11, 2016

PRELIMINARY JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2008-2946 (West Neck Creek, London Bridge Creek, Great Neck Creek)

Navy MidAtlantic Region
Mr. Mike Jones
Code N-45, Regional Environmental Group
1510 Gilbert Street
Norfolk, Virginia 23511-2737

Dear Mr. Jones:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as Oceana Naval Air Station, in Virginia Beach, Virginia.

The map entitled "Wetland Delineation Naval Air Station Oceana 20 May 2011", prepared by the US Army Corps of Engineers provides the location(s) of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

This verification supersedes any previous verification within the areas surveyed and the entire wetland delineation is now valid for a period of five years from the date of this letter.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this

preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the “Preliminary Jurisdictional Determination Form”. Please review the document, sign, and return one copy to Mr. Brian Denson, either via email (brian.c.denson@usace.army.mil) or via standard mail to US Army Corps of Engineers, Regulatory Office, and ATTN: Brian Denson, 803 Front Street Norfolk, Virginia 23510 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact me, either via telephone at (757) 201-7792 or via email at brian.c.denson@usace.army.mil.

Sincerely,

Brian Denson
Project Manager,
Environmental Scientist

Enclosure(s): Delineation Map, Preliminary JD Form, Supplemental Information

Wetland Delineation
Naval Air Station Oceana
20 May 2011

Legend

- Waters
- Wetland
- Installation Area

US Army Corps of Engineers ®
Norfolk District

0 0.25 0.5 1 Miles

US Army Corps of Engineers Regulatory Office
NAS_Oceana_Wetlands.pdf

Aerial Imagery: Virginia Base Mapping Program, 2009

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD):
Tuesday, May 10, 2016

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Navy MidAtlantic Region
Mr. Mike Jones
Code N-45, Regional Environmental Group
1510 Gilbert Street
Norfolk, Virginia 23511-2737

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: NAS Oceana Wetland Delineation

FILE NUMBER: NAO-2008-2946

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: City: Virginia Beach

Center coordinates of site (lat/long in degree decimal format):

Latitude: 36.823409 ° N Longitude: -76.031639 ° W

Universal Transverse Mercator: NAD 83

Name of nearest waterbody:

Identify (estimate) amount of waters in the review area:

Non-wetland waters: linear feet; width (ft); and/or acres.

Cowardin Class:

Stream Flow:

Wetlands: 5, 303 acres

Cowardin Class: PFO, PSS, PEM

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

3. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☒ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey.

Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Aerial Photos, various years, VGIN, Google Earth, Bing

or ☒ Other (Name & Date): LIDAR

☒ Previous determination(s): Oceana Delineation, May 20, 2011

File no. and date of response letter: NAO-2008-2946,

☒ Other information (please specify): Re-visited areas that may have changed based on the regional supplement and plant changes. Line is still accurate.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

DENSON.BRIAN.C.1168799671 Digitally signed by DENSON.BRIAN.C.1168799671 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=DENSON.BRIAN.C.1168799671 Date: 2016.05.11 10:47:29 -04'00'

Signature
Regulatory Project Manager
(REQUIRED)

2016-05-11

Date

JONES.MICHAEL.H.1050421968 Digitally signed by JONES.MICHAEL.H.1050421968 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USN, cn=JONES.MICHAEL.H.1050421968 Date: 2016.05.16 07:16:37 -04'00'

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

Date

Wright, Michael F CIV USN (USA)

From: Denson, Brian C CIV USARMY CENAO (USA) <Brian.C.Denson@usace.army.mil>
Sent: Wednesday, September 25, 2019 11:06 AM
To: Wright, Michael F CIV USN (USA)
Cc: Kube, Peter R CIV USARMY CENAO (US)
Subject: RE: NASO PJD Wetland Mapping Effort_Clarification Regarding Agricultural Land
Signed By: brian.c.denson.civ@mail.mil

Good morning Mike,

That is correct. During our delineation we did NOT look at the farm "fields". Our focus was on the ditches within those fields. Let me know if I can be of any more assistance.

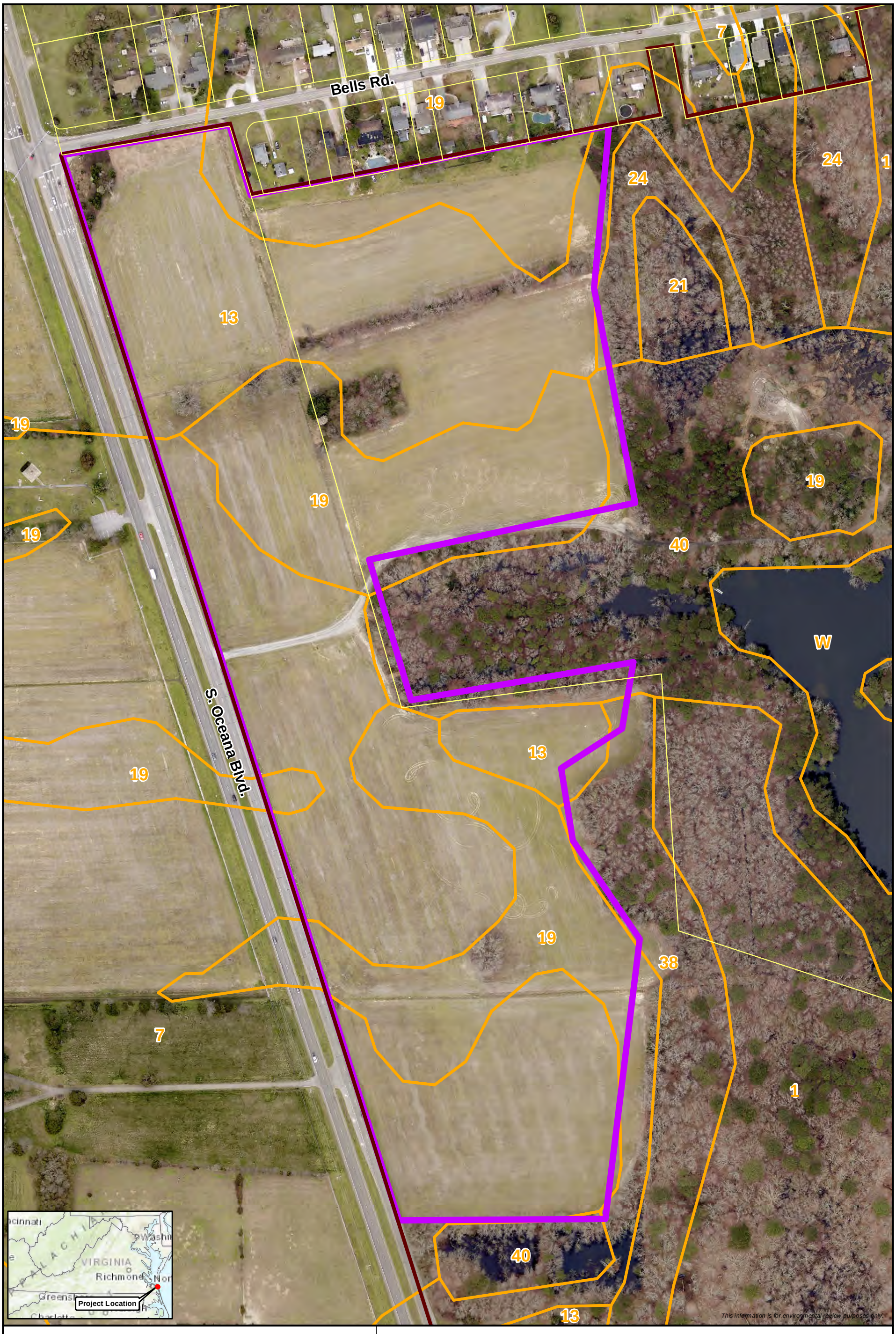
Brian Denson
US Army Corps of Engineers, Norfolk District
Eastern Virginia Regulatory Section
757-201-7792

-----Original Message-----
From: Wright, Michael F CIV USN (USA) [mailto:michael.f.wright@navy.mil]
Sent: Wednesday, September 25, 2019 11:01 AM
To: Denson, Brian C CIV USARMY CENAO (USA) <Brian.C.Denson@usace.army.mil>
Cc: Crum, E E (Pete) CIV USN NAVFAC MIDLANT NOR (USA) <pete.crum@navy.mil>; Herbert, Brandon T CIV USN NAVFAC MIDLANT NOR (USA) <brandon.herbert@navy.mil>; Chamberlain, Terry N CIV USN NAVFAC MIDLANT NOR (USA) <terry.n.chamberlain@navy.mil>; Wright, Kelly D (Dean) CIV USN NAVFAC MIDLANT NOR (USA) <kelly.wright@navy.mil>; Carawan, Wilbur E CIV USN NAVFAC MIDLANT NOR (US) <emmett.carawan@navy.mil>
Subject: NASO PJD Wetland Mapping Effort_Clarification Regarding Agricultural Land

Hi Bryan:
Per our phone conversation, regarding USACE surveying efforts that led up to the initial NAS Oceana (NASO) 2011 PJD and the current 2016 PJD: USACE only surveyed and mapped linear wetland features (ditches and streams) that occurred in agricultural fields; and USACE did not survey for polygonal wetland features within agricultural fields. As such any construction actions that propose to convert agricultural lands that existed during the original 2011 USACE final mapping effort should complete wetland delineations before any ground disturbance. As you mentioned, you came out and confirmed no wetlands were present within the agricultural fields associated with the Back Gate Solar Array field project at NASO.

Sincerely,
Mike
Michael Wright
Natural Resources Manager (NASO) DoD Partners in Flight Rep. (VA) Office: 757-433-3461

APPENDIX B FIGURES



2021 Survey Area
Oceana Switching Station Area
Parcel Boundary
SSURGO Soil Boundary

N

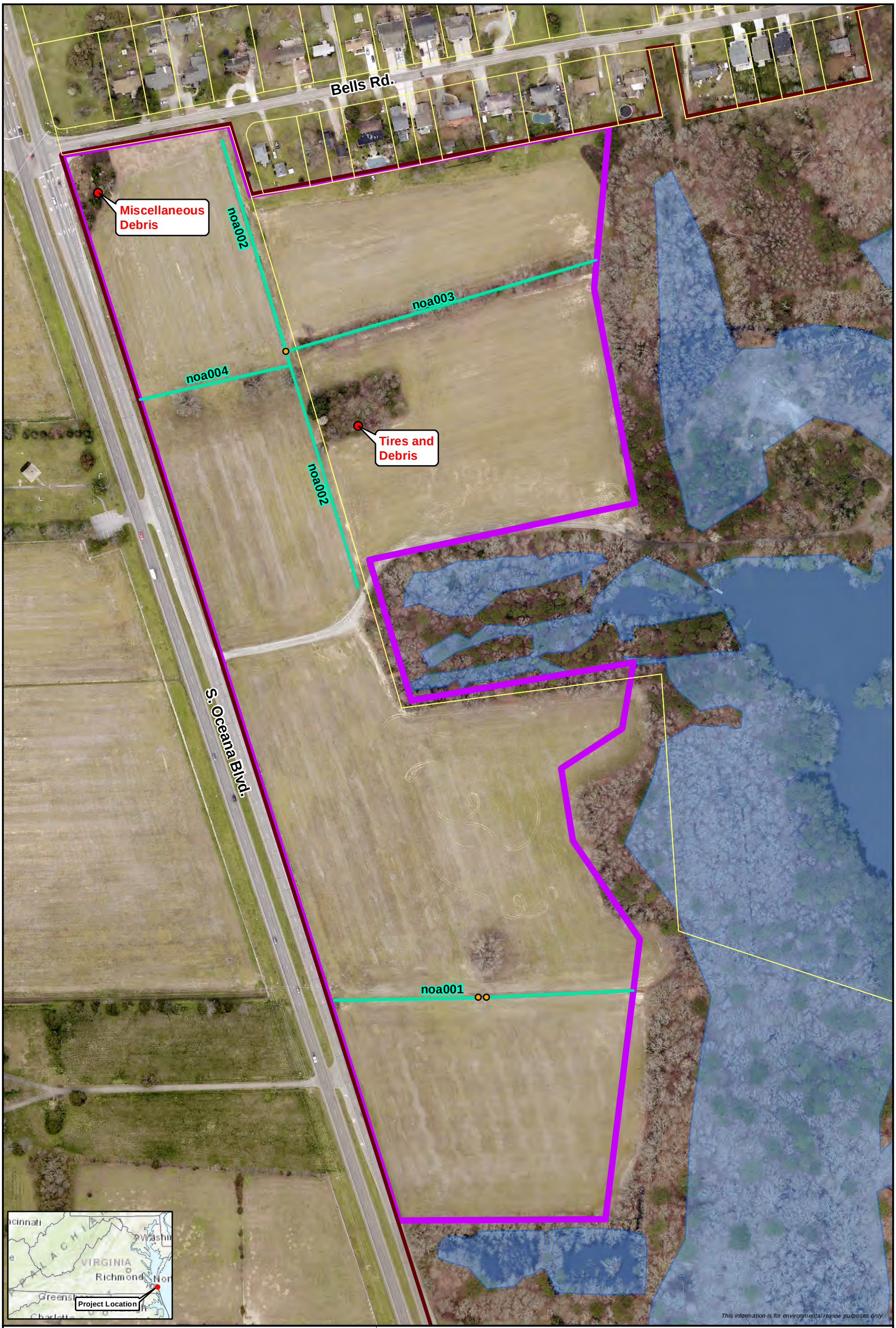
1:2,400

0 100 200 Feet

Figure 1
Coastal Virginia Offshore Wind Project
Dominion Virginia Power
Virginia Beach, VA
Oceana Switching Station Area Survey SSURGO Soils

Dominion Energy

MPLS M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2021\01\Oceana_Surveys_DOM_CVOW_Oceana_Fig1_Soils.mxd | REVISED: 01/29/2021 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239



2021 Survey Area
Oceana Switching Station Area
Parcel Boundary
2016 USACE PJD* Feature
Delineated Wetland
*PJD - Preliminary Jurisdiction Determination

ERM Delineated Features
Non-Jurisdictional Ditch
Debris
Culvert

1:2,400
0 100 200 Feet

Figure 2
Coastal Virginia Offshore Wind Project
Dominion Virginia Power
Virginia Beach, VA
Oceana Switching Station Area Survey Delineated Features

Dominion Energy

MPLS M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2021\01\Oceana_Surveys_DOM_CVOW_Oceana_Fig2_Surveys.mxd | REVISED: 03/10/2021 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239

APPENDIX C DATASHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAS Oceana City/County: Virginia Beach Sampling Date: 01/21/2021

Applicant/Owner: Dominion Energy State: VA Sampling Point: noa001

Investigator(s): T. Cimpi, Z. Bryant Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T Lat: 36.81389 N Long: -76.00483 W Datum: WGS84

Soil Map Unit Name: Munden fine sandy loam NWI classification:

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:

No hydrology, no hydrophytic vegetation, or hydric soils present. Restrictive layer at 4 inches due to drain tile likely for drainage of agricultural.

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)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

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: noa001

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Herb Stratum (Plot size: 5)			
1. Barbarea verna	70	Y	UPL
2. Eleusine indica	30	N	FACU
3.			
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: 15)			
1. None			
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: 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	70	x 5 =	350
Column Totals:	100 (A)		470 (B)

Prevalence Index = B/A = 4.70

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 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** X

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

SOIL

Sampling Point: noa001

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					Silt Loam	Restrictive layer at 4 inches.

[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)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: Drain tile

Depth (inches): 4.0 in

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

Remarks:

noa001

Facing East

Facing West

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAS Oceana City/County: Virginia Beach Sampling Date: 01/21/2021

Applicant/Owner: Dominion Energy State: VA Sampling Point: noa002

Investigator(s): T. Cimpi, Z. Bryant Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T Lat: 36.81662 N Long: -76.00549 W Datum: WGS84

Soil Map Unit Name: Munden fine sandy loam NWI classification:

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:

No hydrology, no hydrophytic vegetation, or hydric soils present. Restrictive layer at 4 inches due to drain tile likely for drainage of agricultural.

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)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

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: noa002

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Herb Stratum (Plot size: 5)			
1. Barbarea verna	65	Y	UPL
2. Eleusine indica	30	N	FACU
3. Rumex altissimus	5	N	FACW
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: 15)			
1. None			
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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	65	x 5 =	325
Column Totals:	100 (A)		455 (B)

Prevalence Index = B/A = 4.55

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 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** X

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

SOIL

Sampling Point: noa002

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					SiltLoam	Restrictive layer at 4 inches.

[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)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: Drain tile

Depth (inches): 4.0 in

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

Remarks:

Drain tile present at 4 inches likely due to draining Agricultural fields.

noa002

Facing North

Facing South

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAS Oceana City/County: Virginia Beach Sampling Date: 01/21/2021

Applicant/Owner: Dominion Energy State: VA Sampling Point: noa003

Investigator(s): T. Cimpi, Z. Bryant Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T Lat: 36.81824 N Long: -76.00411 W Datum: WGS84

Soil Map Unit Name: Munden fine sandy loam NWI classification:

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:

No hydrology, no hydrophytic vegetation, or hydric soils present. Restrictive layer at 6 inches due to drain tile likely for drainage of agricultural.

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)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

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: noa003

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus virginiana	80	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5)			
1. Barbarea verna	30	Y	UPL
2. Eleusine indica	25	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15)			
1. None			
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: 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	30	x 5 =	150
Column Totals:	135 (A)		570 (B)

Prevalence Index = B/A = 4.22

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 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** X

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

SOIL

Sampling Point: noa003

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					SiltLoam	Restrictive layer at 6 inches.

[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)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: Drain tile

Depth (inches): 6.0 in

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

Remarks:

Drain tile present at 6 inches likely due to draining Agricultural fields.

noa003

Facing East

Facing West

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAS Oceana City/County: Virginia Beach Sampling Date: 01/21/2021

Applicant/Owner: Dominion Energy State: VA Sampling Point: noa004

Investigator(s): T. Cimpi, Z. Bryant Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T Lat: 36.81776 N Long: -76.00599 W Datum: WGS84

Soil Map Unit Name: Munden fine sandy loam NWI classification:

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:

No hydrology, no hydrophytic vegetation, or hydric soils present. Restrictive layer at 4 inches due to drain tile likely for drainage of agricultural.

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)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

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: noa004

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

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

Herb Stratum (Plot size: 5)			
1. Barbarea verna	65	Y	UPL
2. Eleusine indica	30	N	FACU
3. Rumex altissimus	5	N	FACW
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: 15)			
1. None			
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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	65	x 5 =	325
Column Totals:	100 (A)		455 (B)

Prevalence Index = B/A = 4.55

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 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** X

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

SOIL

Sampling Point: noa004

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					SiltLoam	Restrictive layer at 4 inches.

[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)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: Drain tile

Depth (inches): 4.0 in

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

Remarks:

Drain tile present at 4 inches likely due to draining Agricultural fields.

noa004

Facing East

Facing West

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAS Oceana City/County: Virginia Beach Sampling Date: 01/21/2021

Applicant/Owner: Dominion Energy State: VA Sampling Point: noa005

Investigator(s): T. Cimpi, Z. Bryant Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T Lat: 36.81893 Long: -76.00737 Datum: WGS84

Soil Map Unit Name: Munden fine sandy loam NWI classification:

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:

No hydrology, no hydrophytic vegetation, or hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ 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)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

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: noa005

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 15)			
1. Elaeagnus umbellata	40	Y	UPL
2. Juniperus communis	30	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum (Plot size: 5)			
1. Schedonorus pratensis	25	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 15)			
1. None			
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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.33333 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	55	x 4 =	220
UPL species	40	x 5 =	200
Column Totals:	105 (A)		440 (B)

Prevalence Index = B/A = 4.19

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 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** X

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

SOIL

Sampling Point: noa005

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

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

[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)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Small depression near road side with household debris, trash, pieces of concrete/asphalt, and cement medians perimeter near the road. Vegetation in this area includes autumn olive, which is an indicator of a disturbed area and doesn't have a wetland indicator status.

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June 23, 2021

NOTIFICATION OF APPROVED JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2021-01006

Requestor: Mr. Robert (Bob) Bisha
Address: 120 Tredegar Street
Richmond, Virginia 23219

Property Owner (if different from Requestor): Commanding Officer, Naval Air Station Oceana, Address: c/o Blake Waller, Department of the Navy, Naval Air Station Oceana, 1750 Tomcat BLVD, Virginia Beach, VA 23460

PROPERTY/PROJECT/EVALUATION AREA INFORMATION

Size (acres): 42 Town/County: Virginia Beach
Nearest Waterway: Owls Creek Latitude: 36.81776
USGS HUC: 02040304 Longitude: -76.005599
Location Description: 42 acre farm field south of Bells Mill Road, East of Oceana Blvd in Virginia Beach.

Jurisdictional Wetlands (acres): 0

Jurisdictional Streams (linear feet): 0

A. DETERMINATION

On April 13, 2021, the U.S. Army Corps of Engineers (Corps) received your request for an approved jurisdictional determination for the above-described area. Based upon an office (desktop) evaluation, 33 CFR 329 - Definition of Navigable Waters of the United States, and 33 CFR 328 - Definition of Waters of the United States and federal regulations of navigable waters, the Corps determines:

The above-described area is comprised entirely of uplands. The Corps did not identify any waters regulated under Section 404 of the Clean Water Act (33 U.S.C. 1344), or Section 10 of the Rivers and Harbors Act (33 U.S.C. 403).

The delineation included herein has been conducted to identify the location and extent of the water boundaries and the jurisdictional status of the waters for purposes of the CWA and RHA for the above-described area identified in this request.

This delineation and jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. Therefore, if you or your tenant are US Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

B. ADMINISTRATIVE APPEALS INFORMATION

This notification constitutes an approved jurisdictional determination for the above-described area. If you object to this determination, you may request an administrative appeal under the Corps regulations (33 CFR Part 331). Please find the enclosed Notification of Appeal Options and Process (NAP) and Request for Appeal (RFA). If you request to appeal this determination, you must submit a completed RFA to the following address:

Attn: Ms. Naomi J. Handell, Regulatory Program Manager
United States Army Corps of Engineers
CENAD-PD-OR
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, New York 11252-6700

The Corps will determine whether the RFA is complete and meets the criteria for appeal under 33 CFR 331.5. The RFA must be received at the above address within 60 days of the NAP, and by August 23, 2021. The Corps will not accept incomplete or late RFAs. You do not need to submit an RFA if you do not object to the approved jurisdictional determination.

C. EXPIRATION DATE

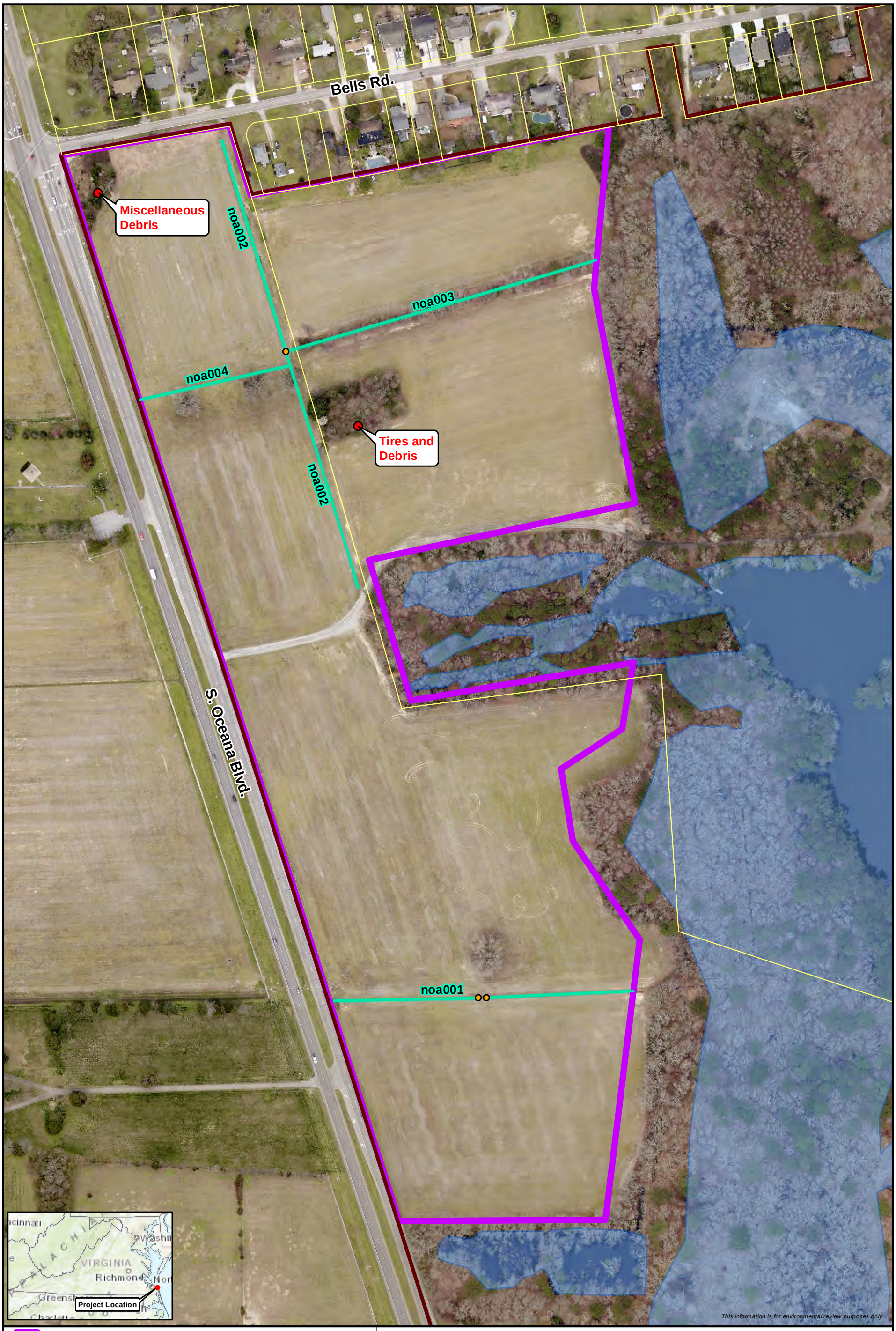
This approved jurisdictional determination is valid for five years from the date of this notification unless new information warrants revision prior to the expiration date.

If you have any questions regarding this notification, please contact Brian Denson via telephone at (757) 201-7792 or via email at Brian.C.Denson@usace.army.mil.

Brian Denson
Environmental Scientist
Norfolk District Regulatory Branch

Enclosure(s): Map of review area, Administrative Appeals Form, AJD Form

Received by USACE NAO by DGM April 13, 2021



2021 Survey Area
Oceana Switching Station Area
Parcel Boundary
2016 USACE PJD* Feature
Delineated Wetland
*PJD - Preliminary Jurisdiction Determination

ERM Delineated Features
Non-Jurisdictional Ditch
Debris
Culvert

1:2,400
0 100 200 Feet

Figure 2
Coastal Virginia Offshore Wind Project
Dominion Virginia Power
Virginia Beach, VA
Oceana Switching Station Area Survey Delineated Features

Dominion Energy

MPLS M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2021\01\Oceana_Surveys_DOM_CVOW_Oceana_Fig2_Surveys.mxd | REVISED: 03/10/2021 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 23-JUN-2021
ORM Number: NAO-2021-01006
Associated JDs: N/A or ORM numbers and identifiers (e.g. HQS-2020-00001-MSW-MITSITE)
Review Area Location[1]:
State/Territory: VA City: County/Parish/Borough: Virginia Beach city
Center Coordinates of Review Area: Latitude 36.81776 Longitude -76.005599

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☒ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: Site is comprised entirely of non hydric soils, including the ditch bottoms. There is no evidence of hydrology during the growing season and the vegetation onsite is dominated by non-hydrophytic species.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in section II.C).
- ☐ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size	§ 10 Criteria	Rationale for § 10 Determination
N/A	N/A	N/A	N/A

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters)[3]

(a)(1) Name	(a)(1) Size	(a)(1) Criteria	Rationale for (a)(1) Determination
N/A	N/A	N/A	N/A

Tributaries ((a)(2) waters):

(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
N/A	N/A	N/A	N/A

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):

(a)(3) Name	(a)(3) Size	(a)(3) Criteria	Rationale for (a)(3) Determination
N/A	N/A	N/A	N/A

Adjacent wetlands ((a)(4) waters):

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination
N/A	N/A	N/A	N/A

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12))[4]:

Exclusion Name	Exclusion Size	Exclusion[5]	Rationale for Exclusion Determination
N/A	N/A	N/A	N/A

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

_X_ Information submitted by, or on behalf of, the applicant/consultant: "Figure 2, Coastal Virginia Offshore Wind Project, Dominion Virginia Power, Virginia Beach, VA, Oceana Switching Station Area Survey Delineated Features" dated REVISED: 03/10/2021.
This information is sufficient for purposes of this AJD.
Rationale: *N/A*

___ Data sheets prepared by the Corps: *Title(s) and/or date(s).*

_X_ Photographs: *Google Earth, VGIN, Onsite photos taken by consultant*

___ Corps Site visit(s) conducted on: *Date(s).*

__X Previous Jurisdictional Determinations (AJDs or PJDs): *NAO-2008-2946, May 11, 2016*

__X Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*

_X_ USDA NRCS Soil Survey: *Title(s) and/or date(s).*

_X_ USFWS NWI maps: *Title(s) and/or date(s).*

_X_ USGS topographic maps: *Title(s) and/or date(s).*

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
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B. Typical year assessment(s): The APT tool shows the area was wetter than normal during data collection. During this period of wetter than normal, the site showed no indicators of hydrology.

C. Additional comments to support AJD: Site is comprised entirely of non hydric soils, including the ditch bottoms. There is no evidence of hydrology during the growing season and the vegetation onsite is dominated by non hydrophytic species.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
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NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Bob Bisha, Dominion Energy Services	File Number: NAO-2021-1006	Date: 6/23/2021
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact: Ms. Naomi J. Handell Regulatory Program Manager (CENAD-PD-OR) U.S. Army Corps of Engineers Fort Hamilton Military Community 301 General Lee Avenue Brooklyn, New York 11252-6700 Telephone number: (917) 789-4841 Naomi.J.Handell@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

1408 Roseneath Road, Suite B
Richmond, VA 23230

Corporate Headquarters
5020 Montrose Blvd. Suite 650
Houston, TX 77006
Main: 713.520.5400

Waters of the U.S. Delineation
for
Bedford Solar Center
Chesapeake County, Virginia

Prepared for:
Coronal Energy
321 E Main St #300
Charlottesville, VA 22902

For Use/Review by:
U.S. Army Corps of Engineers

Prepared by:
RES
1408 Roseneath Road, Suite B
Richmond, VA 23230

May 2018

Table of Contents

Appendices

Project Summary Sheet for USACE Confirmation Site Visit

General Information

Project/Site Name	Bedford Solar Center
Applicant/Owner	Coronal Energy 321 E Main St #300 Charlottesville, VA 22902
Authorized Agent	RES 1408 Roseneath Road, Suite B Richmond, Virginia 23230 Attn: Rick Atkinson, Mike Molnar
Project/Site Size	565.70 +/- acres
Parcel I.D.	GPIN 0620000000120 0620000000100 0620000000040 0620000000090 0620000000090

Project Location

Locality	Chesapeake County, Virginia
USGS Quad. Map(s)	Fentress (VA)
Approx. Latitude	36.6952
Approx. Longitude	-76.1683
Approx. Elevation	10’ - 22’ msl
Nearest Tributary	Pocaty River
HUC Code	03010205 (Albemarle)

Location Description

The approximate 565.70-acre project area is in eastern Chesapeake County roughly 2.1 miles from the area known as Albemarle Acers. The intersection of Blue Ridge Road and Bedford Street is located within the project area, with Blue Ridge Road transecting the project. Refer to the Vicinity map in Appendix A, Figure 1.

Inventory

Classification	Linear Feet (LF)	Square Feet (SF)	Acres (Ac)
Streams	8,780	89,733.6	2.06
Relatively Permanent Waters (RPW)	18,055	72,745.2	1.67
Palustrine Forested Wetland (PFO)	N/A	243,936	5.60
Palustrine Emergent Wetland (PEM)	N/A	37,461.6	0.86

Inventory calculations are based off survey data provided by RES.

Project Report

Executive Summary

RES completed a Waters of the U.S. Delineation on May 10, 2018 in accordance with the *Corps of Engineers' Wetlands Delineation Manual* (U.S. Army Corps of Engineers, 1987), herein referred to as the 1987 Manual, to identify those areas that are most likely within the regulatory purview of the U.S. Army Corps of Engineers (USACE). Based on the on-site field investigation of the approximately 565.70-acre project area, RES has identified potential jurisdictional waters of the U.S. consisting of 8,780 +/- linear feet of streams, 18,055 +/- linear feet of relatively permanent waters, 5.60-acres of palustrine forested wetlands, and 0.86-acres of palustrine emergent wetlands.

Methodology

RES conducted the *Routine Determination for Areas Larger than Five Acres*, as described in the 1987 Manual, which follows a three-parameter approach to identifying wetlands based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. All three parameters must be present for an area to be considered a jurisdictional wetland in accordance with Section 404 of the Clean Water Act. The specific procedures and criteria for determining the presence or absence of these parameters are presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region Version 2.0*, herein referred to as the AGCP Regional Supplement. Other WOUS are identified based on the presence of a high tide line or an ordinary high water mark (OHWM), pursuant to the definition of "waters of the U.S." under Title 33 Code of Federal Regulation Part 328. RES additionally assesses geomorphologic, hydrologic, and biological factors when identifying other WOUS.

Wetlands and other WOUS found on-site are classified according to the Cowardin system, as described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). This is a hierarchical classification system used to organize and describe wetlands and deepwater habitats according to hydrologic, geomorphologic, chemical, and biological factors, and provides uniformity of concepts and terms to define these areas. A table that describes the Cowardin Classification System is provided in Appendix B.

Analysis

Resource Review:
Prior to the field investigation, RES performed a preliminary evaluation of the project area by obtaining and reviewing available natural resource information included in Appendix A; Fentress (VA) U.S. Geological Survey (USGS) quadrangle map (Figure 2), the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Map (Figure 3), aerial imagery of the project area (Figure 4), information from the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey (Figure 5), and any available Geographic Information System (GIS) data.

According to the USGS Quadrangle Map provided with this report, no stream channel exists on-site but several of the agricultural ditches within the project limits are mapped on the National Wetland Inventory Map. The NRCS Soil Survey Information provided shows the project area to be entirely underlain by either hydric soils or soils that are known to contain hydric inclusions. Analysis of this information suggests that it is highly likely that stream and/or wetland resources exist within the project area. Accordingly, our offsite natural resource evaluation was corroborated with an on-site inspection to characterize vegetation, soils, and hydrology, and to define the boundaries of any potential WOUS, including wetlands, that may be present within the project limits.

Overall Site Conditions:
Topography on-site is associated with the headwater drainage network of Pocaty River, a tributary to North Landing River (Figure 4). The project area was previously used for agriculture and contains fallow fields and many large drainage ditches which drain into the Pocaty River. Bedford Street and Blue Ridge Road both transect the project area. The vegetative community for the project area is characterized as fallow field. Representative data for the project area was collected and is available for reference in Appendix C.

Vegetation:
Using the most recent available aerial imagery, a preliminary characterization of the vegetation communities was performed for the project area. Additional data was collected during the on-site investigation to verify the aerial extent and species composition within these communities. The wetland indicator status for each species was determined from *The 2016 National Wetland Plant List, version 3.3* (U.S. Army Corps of Engineers, 2016). The indicator status of a species indicates the probability that the species will occur in a wetland of the United States, which is defined in Table 1 below.

Table 1: Plant Indicator Status as per the *2016 National Plant List*

Plant Indicator Category	Indicator Symbol	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 and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands, but may occur in wetlands.
Obligate Upland	UPL	Almost never occur in wetlands.

The vegetative community for the project area is best characterized as a fallow field.

Soils:
A hydric soil is defined as "a soil 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, July 13, 1994). Indicators of hydric soil conditions are predominantly formed by the reduction, translocation, and accumulation of iron or manganese, the reduction of sulfate, and/or the accumulation of organic material. The criteria used to identify hydric soils outlined in the AGCP Regional Supplement follow the NRCS *Field Indicators of Hydric Soils in the United States* (NRCS, 2016) and are primarily focused on the evaluation of the presence of organic material (e.g., muck or peat) or redoximorphic features (e.g., iron/manganese concentrations or depletions) within the soil profile.

In addition to soils mapping, the NRCS also publishes a national hydric soils list. Some state or county NRCS offices, or other local government entities, also produce local hydric soils lists, which when available, are preferred since they are typically more current and reflective of local variations in soil properties. Analysis of the available soils information shows that the entirety of the project area is underlain by either hydric soils or soils know to contain hydric inclusions (see the *Soils Map* included as Figure 5). All of the potential jurisdictional WOUS identified as part of this investigation are located in areas underlain by either soils that contain hydric inclusions or soils that are considered to be hydric.

Table 2 provides a summary of pertinent data for the soil units mapped on the project site.

Table 2: Soil descriptions from the NRCS Official Soil Series Description

Map Unit Symbol	Map Unit Name	Soil Series	Component % of Map Unit	Taxonomic Subgroup	Drainage Class	Hydric Status
1	Acredale silt loam	Acredale	90	Typic Endoaqualf	Poorly drained	Yes
15	Deloss mucky fine sandy loam	Deloss	85	Typic Umbraquults	Very poorly drained	Yes
16	Deloss-Tomotley-Nimmo complex	Deloss	35	Typic Umbraquults	Very poorly drained	Yes
		Tomotley	30	Typic Endoaquults	Poorly drained	Yes
		Nimmo	25	Typic Endoaquults	Poorly drained	Yes
23	Gertie silt loam	Gertie	80	Typic Endoaquults	Poorly drained	Yes

43	Tomotley-Deloss complex	Tomotley	55	Typic Endoaquults	Poorly drained	Yes
		Deloss	40	Typic Umbraquults	Very poorly drained	Yes
45	Tomotley-Nimmo complex	Tomotley	78	Typic Endoaquults	Poorly drained	Yes
		Nimmo	20	Typic Endoaquults	Poorly drained	Yes
20	Dragston-Tomotley complex	Dragston	70	Aeric Endoaquults	Somewhat poorly drained	No
		Tomotley	25	Typic Endoaquults	Poorly drained	Yes
25	Munden fine sandy loam	Muden	90	Aquic Hapludults	Moderaly well drained	No
42	Tomotley-Bertie complex	Tomtley	60	Typic Endoaquults	Poorly drained	Yes
		Bertie	35	Aeric Endoaquults	Somewhat poorly drained	No

During the field investigation, soil cores were taken to a depth of 18 inches to describe soil morphological characteristics in the upper part, also known as the solum. Soil characteristics including texture and color (hue, value, and chroma) were inspected for each sample. *Munsell Soil Color Charts* were used for determining the soil color. These results can be found within the Wetland Delineation Data Sheets (Appendix C).

Hydrology:
Indicators of wetland hydrology are used in conjunction with hydric soils and hydrophytic vegetation indicators to define the limits of wetlands according to the 1987 Manual and the Atlantic Gulf Coastal Plain (AGCP) Regional Supplement. However, while indicators of hydrophytic vegetation and hydric soils typically provide evidence that soil saturation or inundation has occurred with a frequency and duration sufficient to develop hydric soils and a wetland plant community, indicators of wetland hydrology provide evidence that these hydrologic conditions are continuing at that location, and that the hydric soils and hydrophytic vegetation are not reflective of a previous hydrologic regime. The 1987 Manual states that wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils that are saturated to the surface at some time during the growing season. The evaluation of hydrology conditions during the growing season is important, since the hydrology regime present during that time will exert a controlling influence on the plant species present in a particular area.

The AGCP Regional Supplement divides wetland hydrology indicators into four categories; observation of soil saturation/inundation (Group A), evidence of recent inundation (Group B), evidence of recent soil saturation (Group C), and evidence from other site conditions or data (Group D). These indicators are also categorized as primary or secondary indicators, based on the estimated reliability of each within the region. The AGCP Regional Supplement requires the presence of at least one primary or two secondary indicators for the wetland hydrology parameter to be met. Primary hydrologic indicators include visual observation of inundation or soil saturation near the surface, or the presence of water-stained leaves, sediment deposits, algal mats, oxidized rhizospheres along living roots, or drift lines or watermarks on rocks and vegetation. Secondary hydrologic indicators include the presence of drainage patterns or other microtopographic features indicative of frequent saturation/inundation, moss trim lines, crayfish burrows, or a positive FAC-neutral test. Evidence of most of these indicators can be present even during dry periods, and therefore are useful indicators of the presence of wetland hydrology conditions.

Results

During the investigation, potential jurisdictional features are identified on-site and the boundaries are marked using pink wetland delineation tape. A Waters of the U.S. Delineation Map (Appendix D) depicts

the aerial extent of the potential jurisdictional features identified during the investigation. Additionally, data was collected on-site to characterize representative community types within the project limits and has been compiled in the Wetland Delineation Data Sheets. Data point locations can also be viewed on the attached Waters of the U.S. Delineation Map.

Potential Jurisdictional Features:
Potential jurisdictional features identified within the project area during this delineation are associated with the headwater drainage network of Pocaty River, a tributary to North Landing River. Several of the on-site features are agricultural ditches that have different jurisdictional classifications. In total, 10.19 +/- acres of waters of the U.S. exist on the approximately 565.70-acre site. Jurisdictional features identified within the project limits during RES's on-site investigation include 8,780 linear feet of stream channel, 18,055 linear feet of relatively permanent waters, 5.60-acres of palustrine forested wetlands and 0.86-acres of palustrine emergent wetlands.

The streams and relatively permanent waters within the ditches are the primary drainage features located within the project area. These features drained either directly or indirectly into Pocaty River at the southern end of the project area. A forested wetland is located on the western portion of the project site. Soils of this feature exhibited low-chroma of 10YR 5/2 with common 10YR 6/2 depletions in the matrix and few 10YR 5/8 concentrations in the matrix. The thickness and coloration of this layer are enough to meet to requirements for the Depleted Matrix (F3) hydric soil indicator. Vegetation observed was a predominance of FAC or wetter species such as; *Carpinus caroliniana* (ironwood), *Acer rubrum* (red maple), and *Quercus michauxii* (swamp chestnut oak). No hydrology was recorded.

For detailed information please refer to the Wetland Delineation Data Sheets in Appendix C and Waters of the U. S. Delineation Map in Appendix D.

Table 3 summarizes the data points that were collected during the field investigation:

Table 3: Data Point Summary Table

Data Point	Mapped Soil Unit	Hydrophytic Vegetation	Hydric Soils	Wetland Hydrology	Community ID
DP-1	1	No	No	No	Upland
DP-2	23	No	No	No	Upland
DP-3	16	No	No	No	Upland
DP-4	1	Yes	Yes	Yes	Wetland
DP-5	1	No	No	No	Upland
DP-6	1	No	No	No	Upland
DP-7	42	No	No	No	Upland
DP-8	45	No	No	No	Upland
DP-9	45	Yes	Yes	Yes	Wetland
DP-10	1	No	No	No	Upland

The location of the data points collected are shown on the Waters of the U.S. Delineation Map (Scale: 1" =400'). The data for each point and representative photographs are included in the Wetland Delineation Data Sheets.

References

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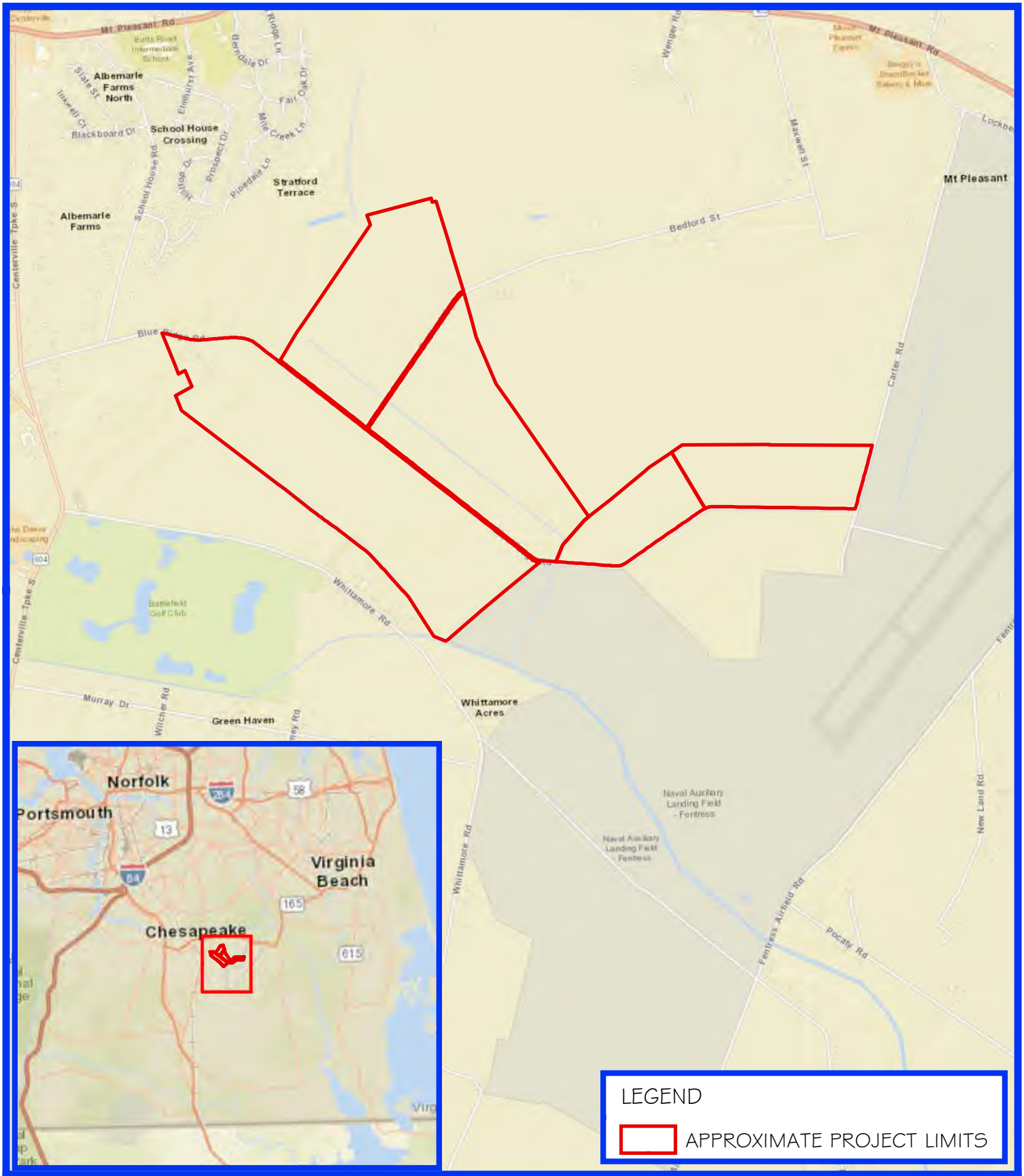
APPENDIX A

FIGURES

VICINITY MAP, PROJECT LOCATION MAP,
NATIONAL WETLAND INVENTORY MAP, AERIAL IMAGERY, SOILS MAP



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VICINITY MAP

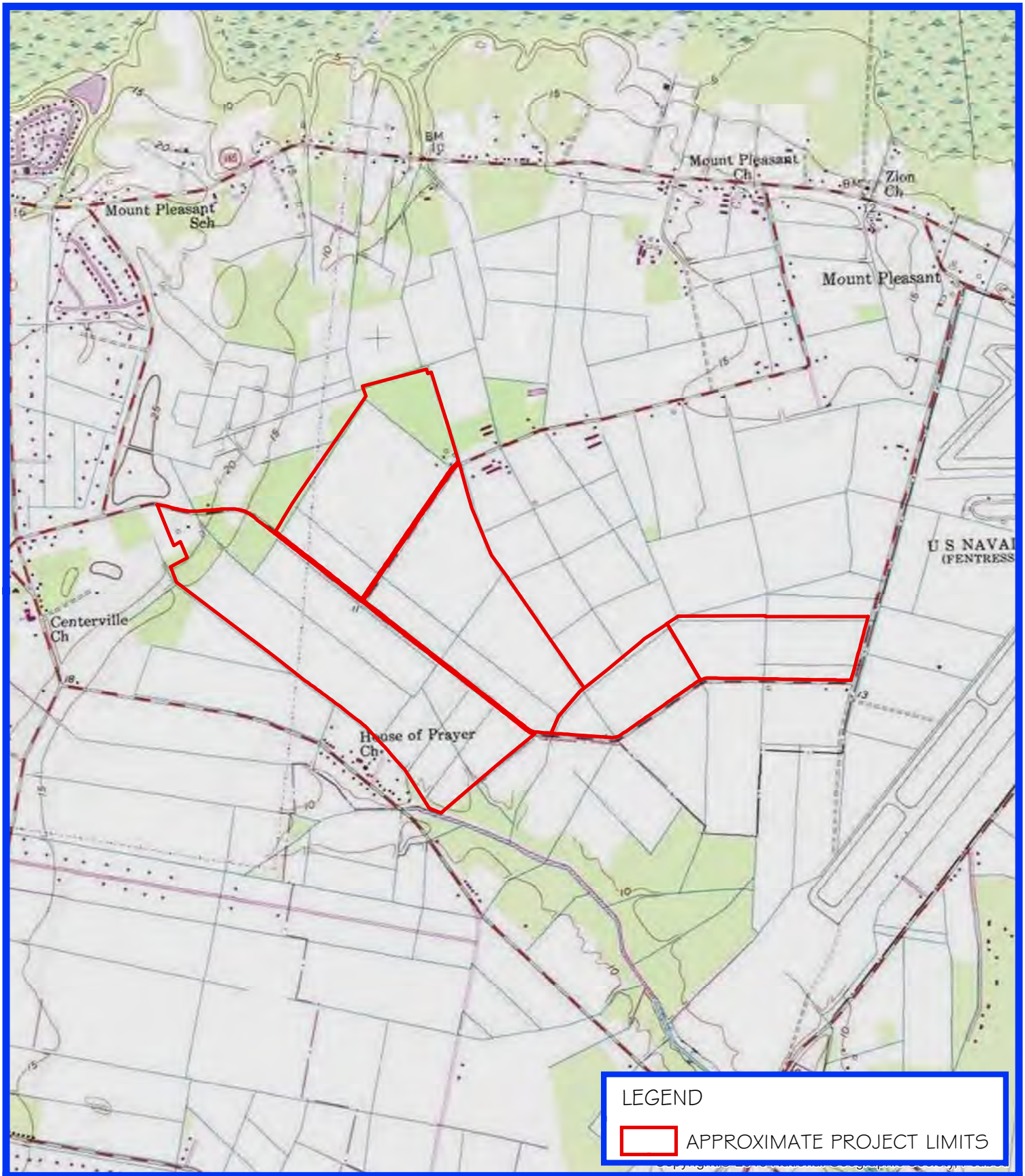
BEDFORD SOLAR CENTER

CHESAPEAKE COUNTY, VIRGINIA

Street Map Source:
World Street Map
ESRI ArcGIS Online

N

1 inch = 2,000 feet



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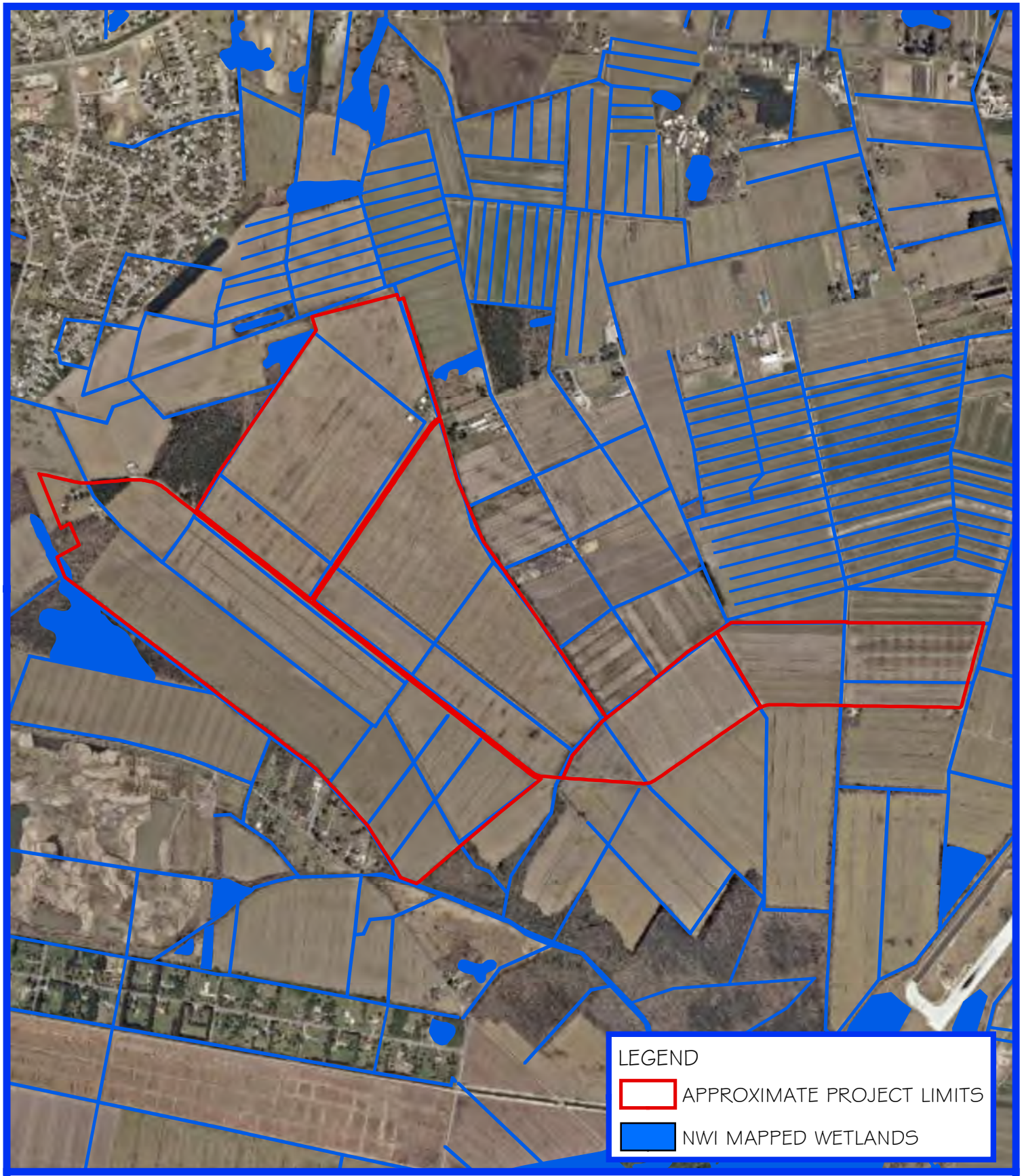
PROJECT LOCATION MAP

BEDFORD SOLAR CENTER

CHESAPEAKE COUNTY, VIRGINIA

USGS Topo Quads: Fentress
Latitude: 36.6952
Longitude: -76.1683
Approx. Project Area: 565.70 acres
Elevation: 10 - 22 feet
Scale: 1 inch = 2,000 feet
Source: http://resources.arcgis.com/ USA Topo Maps

N



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NATIONAL WETLANDS INVENTORY MAP

BEDFORD SOLAR CENTER

CHESAPEAKE COUNTY, VIRGINIA

Digital Ortho Photo Source:
VBMP Most Recent Imagery
Virginia Lambert (VGIN)
National Inventory Wetlands (NWI)
Source
http://www.fws.gov/

1 inch = 1,500 feet

N

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AERIAL IMAGERY

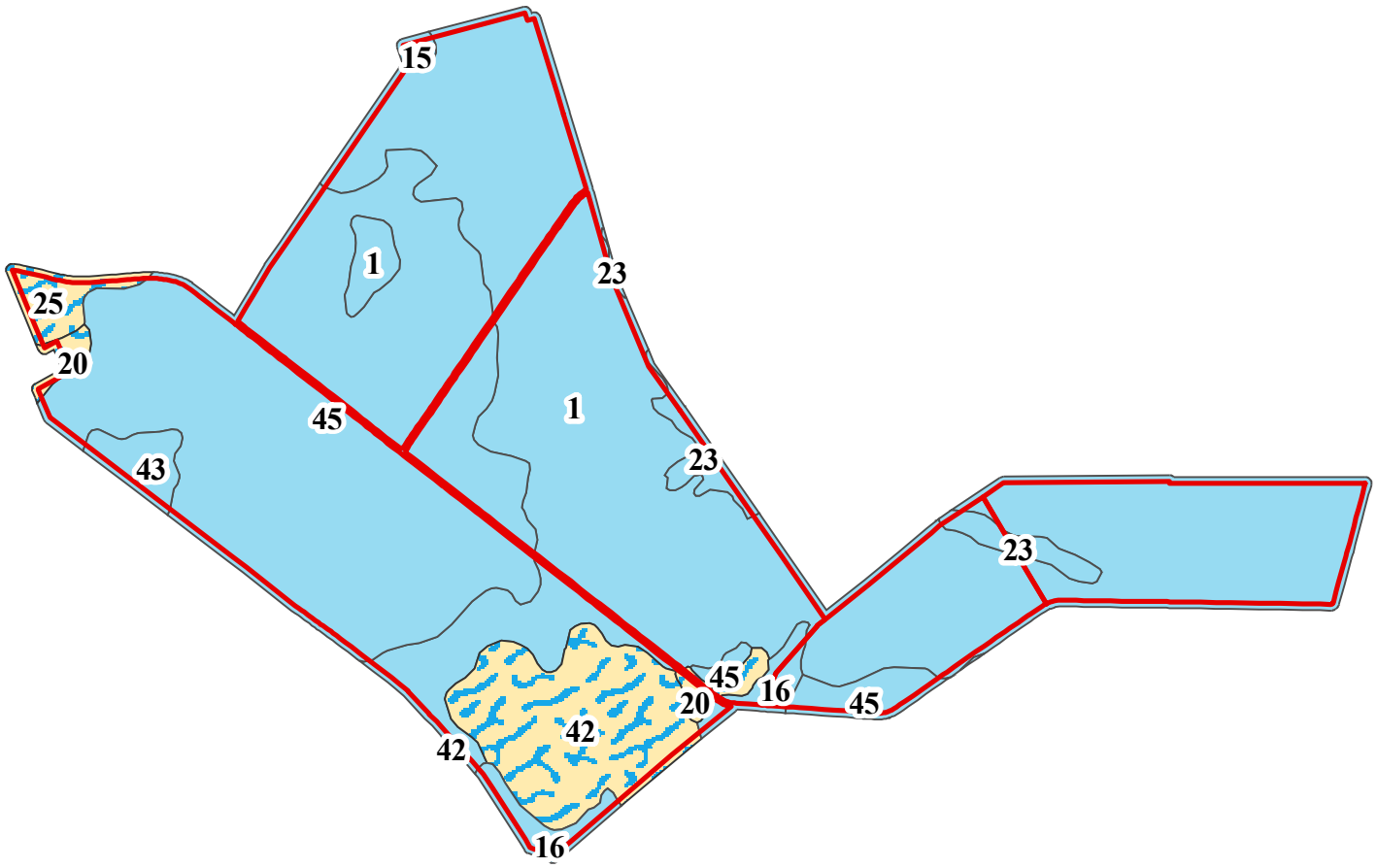
BEDFORD SOLAR CENTER

CHESAPEAKE COUNTY, VIRGINIA

Digital Orthophoto Source:
VBMP Most Recent Imagery
Virginia Lambert (VGIN)

N

1 inch = 1,500 feet



Hydric Soils:
1 - Acredale silt loam
15 - Deloss mucky fine sandy loam
16 - Deloss-Tomotley-Nimmo complex
23 - Gertie silt loam
43 - Tomotley-Deloss complex
45 - Tomotley-Nimmo complex

Soils with Hydric Inclusions:
20 - Dragston-Tomotley complex
25 - Munden fine sandy loam
42 - Tomotley-Bertie complex

Non-hydric Soils:
NONE

Unknown Soil Type:
NONE

LEGEND
- APPROXIMATE PROJECT LIMITS
- HYDRIC SOIL
- SOIL WITH HYDRIC INCLUSIONS
- NON-HYDRIC SOIL

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SOILS MAP

BEDFORD SOLAR CENTER

CHESAPEAKE COUNTY, VIRGINIA

Source:
U.S. Department of Agriculture
Natural Resources
Conservation Service
Soil Survey Geographic
(SSURGO)

1 inch = 1,500 feet

N

APPENDIX B

COWARDIN SYSTEM OF WETLANDS AND DEEPWATER WATER HABITAT CLASSIFICATION

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

M - Marine

Subsystem	1 - Subtidal				2 - Intertidal			
Class	RB – Rock Bottom	UB – Unconsolidated Bottom	AB – Aquatic Bed	RF – Reef	AB – Aquatic Bed	RF – Reef	RS – Rocky Shore	US – Unconsolidated Shore
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud	1 Algal 3 Rooted Vascular	1 Coral 3 Worm	1 Algal 3 Rooted Vascular	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

E - Estuarine

Subsystem	1 - Subtidal				2 - Intertidal									
Class	RB – Rock Bottom	UB – Unconsolidated Bottom	AB – Aquatic Bed	RF – Reef	AB – Aquatic Bed	RF – Reef	SB – Streambed	RS – Rocky Shore	US – Unconsolidated Shore	EM – Emergent	SS – Scrub-Shrub	FO – Forested
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular	2 Mollusk 3 Worm	1 Algal 3 Rooted Vascular 4 Floating Vascular	2 Mollusk 3 Worm	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Non-persistent 5 *Phragmites australis*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen

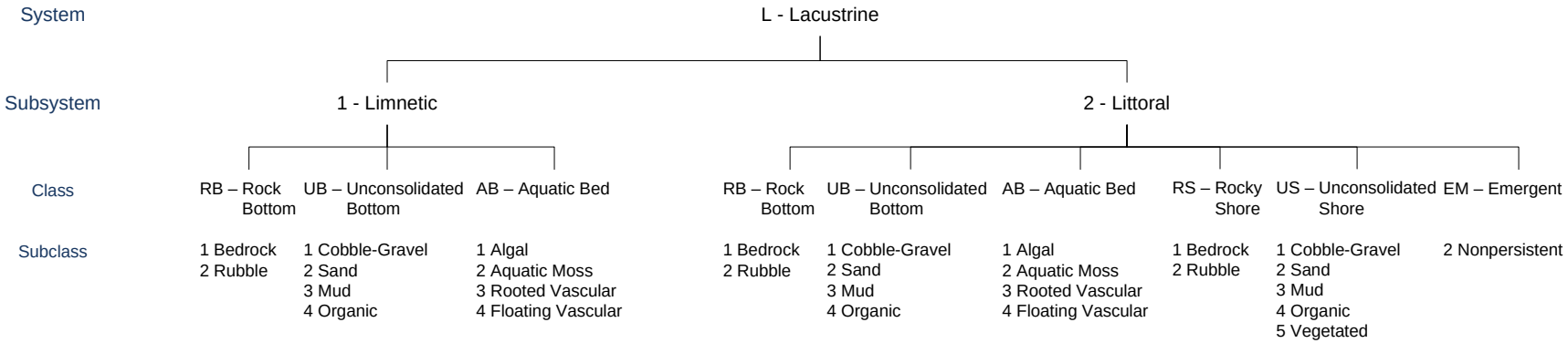
R - Riverine

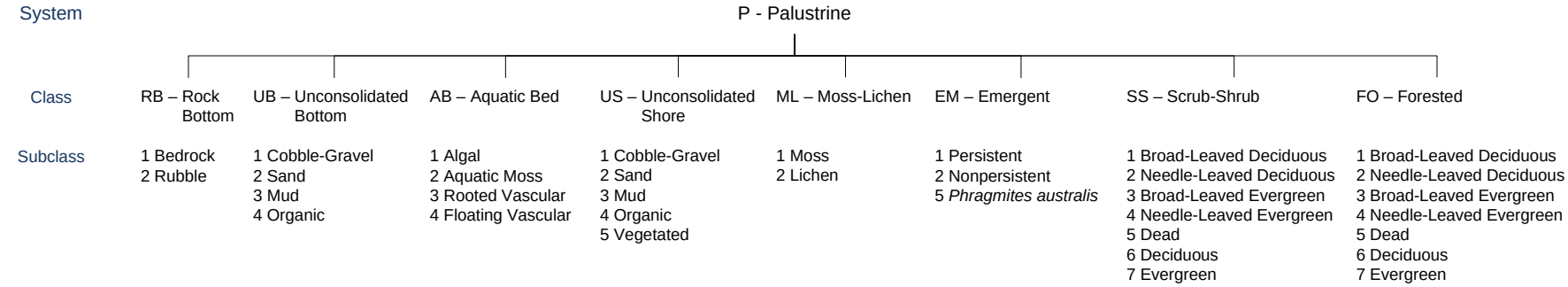
Subsystem	1 - Tidal	2 – Lower Perennial	3 – Upper Perennial	4* - Intermittent	5** – Unknown Perennial		
Class	RB – Rock Bottom	UB – Unconsolidated Bottom	SB*** – Streambed	AB – Aquatic Bed	RS – Rocky Shore	US – Unconsolidated Shore	EM – Emergent
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent

* **Intermittent** is limited to the **Streambed** Class
** **Unknown Perennial** is limited to **Unconsolidated Bottom**
*** **Streambed** is limited to **Tidal** and **Intermittent** Subsystems

Classification of Wetlands and Deepwater Habitats of the United States, Cowardin *et al*. 1979

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION





MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	l Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

APPENDIX C
WETLAND DELINEATION DATA SHEETS

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 08-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 1

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 1 - Acredale silt loam **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

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

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

Remarks:

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

Sampling Point: 1

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	20	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 10	20% of Total Cover: 4	20 = **Total Cover**	
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-10	10YR 4/1	100					Clay Loam	
10-18	5Y 5/1	95	10YR 5/6	5	C	M	Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **1** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010910.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010911.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 08-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 2

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 23 - Gertie silt loam **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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 ◉

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

Remarks:

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

Sampling Point: 2

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-12	10YR	4/1	100						Fine Sandy Clay	
12-18	2.5Y	5/2	97	10YR	5/8	3	C	M	Fine Sandy 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **2** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010913.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010914.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 08-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 3

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 16 - Deloss-Tomotley-Nimmo complex **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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 ◉

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

Remarks:

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

Sampling Point: 3

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	10YR	4/1	100						Sandy Loam	
8-14	2.5Y	5/2	97	2.5Y	6/6	3	C	M	Sandy Loam	
14-18	2.5Y	5/1	97	10YR	6/8	3	C	M	Fine 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **3** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010919.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010920.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 09-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 4

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 1 - Acredale silt loam **NWI classification:** Wetland

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ○	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	4
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 (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 4

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0 = **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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	7.5YR	5/1	100						Clay Loam	
6-18	10YR	6/1	90	10YR	5/6	10	C	M	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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **4** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010928.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010929.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 09-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 5

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 1 - Acredale silt loam **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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 ◉

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

Remarks:

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

Sampling Point: 5

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	4/1	100						Clay Loam	
3-6	2.5Y	4/1	100						Clay Loam	
6-18	2.5Y	5/1	97	10YR	5/6	3	C	M	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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **5** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010931.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 09-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 6

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 1 - Acredale silt loam **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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 ◉

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

Remarks:

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

Sampling Point: 6

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-10	2.5Y	3/2	100						Clay Loam	
10-18	2.5Y	4/1	97	10YR	5/6	3	C	M	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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **6** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010942.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010943.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 09-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 7

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 42 - Tomotley-Bertie complex **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

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

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

Remarks:

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

Sampling Point: 7

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	4/2	100						Sandy Loam	
4-10	10YR	5/2	100						Sandy Loam	
10-18	2.5Y	4/2	95	10YR	5/6	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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **7** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010950.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010951.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 10-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 8

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 45 - Tomotley-Nimmo complex **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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 ◉

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

Remarks:

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

Sampling Point: 8

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Fagus grandifolia	40	☑	66.7%	FACU
2. Acer rubrum	10	☐	16.7%	FAC
3. Quercus phellos	10	☐	16.7%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 30	20% of Total Cover: 12	60	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1. Carpinus caroliniana	5	☑	50.0%	FAC
2. Aralia spinosa	5	☑	50.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2	10	= Total Cover	

Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size:)				
1. Elymus virginicus	10	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2	10	= Total Cover	

Woody Vine Stratum (Plot size:)				
1. Toxicodendron radicans	5	☐	16.7%	FAC
2. Lonicera japonica	10	☑	33.3%	FACU
3. Parthenocissus quinquefolia	15	☑	50.0%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 15	20% of Total Cover: 6	30	= 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: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	10	x 2 =	20	
FAC species	35	x 3 =	105	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	385	(B)

Prevalence Index = B/A = 3.500

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100						Fine Sandy Loam	
3-8	10YR	4/2	100						Fine Sandy Loam	
8-18	2.5Y	5/2	100						Fine Sandy 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **8** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010958.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010960.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 10-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** 9

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 45 - Tomotley-Nimmo complex **NWI classification:** Wetland

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ○	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ 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): 10

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Sampling Point: 9

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Fagus grandifolia	20	☑	28.6%	FACU
2. Carpinus caroliniana	30	☑	42.9%	FAC
3. Acer rubrum	15	☑	21.4%	FAC
4. Quercus michauxii	5	☐	7.1%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 35	20% of Total Cover: 14	70	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1. Carpinus caroliniana	5	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 2.5	20% of Total Cover: 1	5	= Total Cover	

Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size:)				
1. Arisaema triphyllum	5	☑	50.0%	FACW
2. Dendrolycopodium dendroideum	5	☑	50.0%	FACU
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2	10	= Total Cover	

Woody Vine Stratum (Plot size:)				
1. Smilax rotundifolia	10	☑	50.0%	FAC
2. Parthenocissus quinquefolia	5	☑	25.0%	FACU
3. Vitis rotundifolia	5	☑	25.0%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 10	20% of Total Cover: 4	20	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	65	x 3 =	195
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	105 (A)		335 (B)

Prevalence Index = B/A = 3.190

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100						Fine Sandy Loam	
3-18	10YR	5/2	60	10YR	6/2	35	D	M	Fine Sandy Loam	
				10YR	5/8	5	C	M		

[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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **9** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010965.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010966.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bedford Solar Center **City/County:** Chesapeake **Sampling Date:** 10-May-18

Applicant/Owner: Coronal Energy **State:** VA **Sampling Point:** **10**

Investigator(s): M. Molnar, K. Thomas **Section, Township, Range:** **S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR or MLRA): MLRA 153B in LRR T **Lat.:** 36.6952 **Long.:** -76.1683 **Datum:** NAD83

Soil Map Unit Name: 1 - Acredale silt loam **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** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ 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 ◉	**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 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)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 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)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

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

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

Remarks:

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

Sampling Point: 10

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Sapling or Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
12.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= Total Cover**
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	**= 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

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.**

Definition of 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.

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

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	10YR	4/2	100						Fine Sandy Loam	
6-10	2.5Y	5/1	97	2.5Y	5/6	3	C	M	Fine Sandy Loam	
10-18	2.5Y	6/6	70	2.5Y	5/1	30	D	M	Fine Sandy 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

[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:

Plot ID: **10** Photo Path: C:\WetformOrig\Bedford Solar\Photos\

Photo File: **P1010981.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **-76.1683** Lat/Northing: **36.6952**

Description:

Photo File: **P1010982.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

APPENDIX D
WATERS OF THE U.S. DELINEATION MAP

1 INCH = 400 FEET

0 400 800 1,200 FEET

LEGEND

- APPROXIMATE PROJECT LIMITS
- STREAM LIMITS
- RELATIVELY PERMANENT WATER
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
- SOILS

Hydric Soils:
1 - Acredale silt loam
15 - Deloss mucky fine sandy loam
16 - Deloss-Tomotley-Nimmo complex
23 - Gertie silt loam
43 - Tomotley-Deloss complex
45 - Tomotley-Nimmo complex

Soils with Hydric Inclusions:
20 - Dragston-Tomotley complex
25 - Munden fine sandy loam
42 - Tomotley-Bertie complex

Non-hydric Soils:
NONE

Unknown Soil Type:
NONE

SITE DATA:
TOTAL PROJECT AREA = 565.70 +/- AC
TOTAL WATERS OF THE U.S. = 10.19 +/- AC

STREAMS
TOTAL STREAMS = 2.06 +/- AC (8,780 +/- LF)

RELATIVELY PERMANENT WATERS
TOTAL RELATIVELY PERMANENT WATERS = 1.67 +/- AC (18,055 +/- LF)

WETLANDS
TOTAL PFO = 5.60 +/- AC
TOTAL PEM = 0.86 +/- AC
TOTAL WETLANDS = 6.46 +/- AC

NOTES:
1. BASE MAPPING OBTAINED FROM RES.
2. LIMITS OF WETLANDS AND STREAMS DEPICTED ON THIS MAP WERE DELINEATED AND GPS LOCATED BY RES.
3. WETLANDS WERE DELINEATED ON MAY 8-10, 2018, IN ACCORDANCE WITH PROCEDURES OUTLINED IN THE U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, AS WELL AS THE REGIONAL SUPPLEMENT TO THE U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: ATLANTIC AND GULF COASTAL PLAIN REGION (VERSION 2.0). OTHER WATERS OF THE U.S. ARE DELINEATED BASED ON THE PRESENCE OF AN ORDINARY HIGH WATER MARK, AS DEFINED BY THE U.S. ARMY CORPS OF ENGINEERS DEFINITION OF A WATER OF THE U.S.

res
CORPORATE | 5020 MONTROSE BLVD., SUITE 650 HOUSTON, TX 77006
P: 713.520.5400
WWW.RES.US

PROJECT: BEDFORD SOLAR CENTER

WATERS OF THE U.S. DELINEATION MAP

CHESAPEAKE COUNTY, VIRGINIA

PROJECT MANAGER: RA
DRAWN: TB
JOB NUMBER: 5235.18
DATE: 05/23/2018
REVISIONS: NONE

CORONAL ENERGY
powered by Panasonic

Memorandum

Date: December 11, 2018

Subject: Estimated Wetland and Stream Impact

From: Lukas Klavins, Civil PE

To: Tyler Cline, PMP

This memo provides a summary of wetland and stream impact of the Bedford Solar Center based upon the attached Waters of the U.S. Delineation Map provided by RES. This exhibit displays jurisdictional streams and wetlands per preliminary feedback by the U.S. Army Corps of Engineers. Notation and classification provided below is per the RES Exhibit.

ID	TYPE	IMPACT
PEM-6	Palustrine Emergent Wetland	No Impact
PF-20	Palustrine Forested Wetlands	No Impact
R3-1	Stream	2 stormwater fence crossing approx. 10 LF at each crossing of stream disturbance 20 FT wide access road crossing and culvert, impact to stream estimated at 40 LF of stream disturbance
R3-3	Stream	No Impact
R3-21	Stream	No Impact
R4-22	Stream	No Impact
R4-23	Stream	1 stormwater fence crossing approx. 10 LF of stream disturbance
RPW-2	Relatively Permanent Water	No Impact
RPW-9	Relatively Permanent Water	No Impact
RPW-12	Relatively Permanent Water	No Impact

For location of these impacts see the current array plan.

Please feel free to call me at (530) 747-2026 x 244 if you have any questions or if you require any additional information.

Lukas Klavins, PE
Civil Project Engineer
CORONAL ENERGY
powered by Panasonic

1 INCH = 400 FEET

0 400 800 1,200 FEET

LEGEND

- APPROXIMATE PROJECT LIMITS
- STREAM LIMITS
- RELATIVELY PERMANENT WATER (RPW)
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
- SOILS

Hydric Soils:
1 - Acredale silt loam
15 - Deloss mucky fine sandy loam
16 - Deloss-Tomotley-Nimmo complex
23 - Gertie silt loam
43 - Tomotley-Deloss complex
45 - Tomotley-Nimmo complex

Soils with Hydric Inclusions:
20 - Dragston-Tomotley complex
25 - Munden fine sandy loam
42 - Tomotley-Bertie complex

Non-hydric Soils:
NONE

Unknown Soil Type:
NONE

SITE DATA:
TOTAL PROJECT AREA = 565.70 +/- AC
TOTAL WATERS OF THE U.S. = 7.21 +/- AC

STREAMS
TOTAL STREAMS = 1.34 +/- AC (6,149 +/- LF)

RELATIVELY PERMANENT WATERS
TOTAL RELATIVELY PERMANENT WATERS = 0.21 +/- AC (2,100 +/- LF)

WETLANDS
TOTAL PFO = 5.60 +/- AC
TOTAL PEM = 0.06 +/- AC
TOTAL WETLANDS = 5.66 +/- AC

NOTES:
1. BASE MAPPING OBTAINED FROM RES.
2. LIMITS OF WETLANDS AND STREAMS DEPICTED ON THIS MAP WERE DELINEATED AND GPS LOCATED BY RES.
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PROJECT: BEDFORD SOLAR CENTER

WATERS OF THE U.S. DELINEATION MAP

CHESAPEAKE COUNTY, VIRGINIA

PROJECT MANAGER: RA
DRAWN: TB
JOB NUMBER: 5235.18
DATE: 11/28/2018
REVISIONS: NONE

Document Path: Y:\GIS\GIS_Work\Active_Jobs\5235.18_Bedford_Solar_Center\maps\5235.18_WET_SHT1_24x36_052318.mxd - Date Saved: 11/28/2018

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

March 14, 2019

APPROVED JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2018-01177 (Pocaty River)

Bedford Solar Center, LLC
ATTN: Ms. Erin Kath
P.O. Box 2055
Charlottesville, VA 22902

Dear Ms. Kath:

This letter is in regard to your request for verification of an approved jurisdictional determination for the waters of the U.S. (including wetlands) on property known as “Bedford Solar”. The site is located on approximately 566 acres in the vicinity of Blue Ridge Road and Bedford Street, in Chesapeake, Virginia (tax map parcel numbers: 0620000000090, 0620000000040, 062000000100, 062000000120).

An on-site jurisdictional determination has found waters and wetlands regulated under Section 404 of the Clean Water Act (33 U.S.C. 1344) on the property listed above. Tributaries and nontidal wetlands have been identified on the site. This letter shall serve to confirm the wetlands delineation by RES, as shown on the map titled, "Project: Bedford Solar, Waters of the U.S. Delineation Map" dated 29 January 2019 (*copy attached*).

Our basis for this determination is the application of the Corps' 1987 Wetland Delineation Manual (*and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*) and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation. The wetland is a water of the United States and is part of a tributary system to interstate waters (33 CFR 328.3(a)). These waters meet the Corps' definition of waters of the United States, are part of a tributary system to interstate waters (33 CFR 328.3 (a)) and have an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into jurisdictional waters and/or wetlands on this site will require a Department of the Army permit and may require authorization by state and local authorities, including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps jurisdiction for the waters and/or wetlands on the subject property and does

not authorize any work in these jurisdictional areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

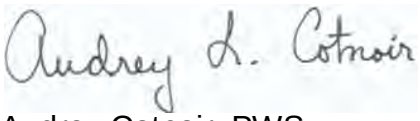
This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

ATTN: Mr. James Haggerty, Regulatory Program Manager
United States Army Corps of Engineers
CENAD-PD-OR
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, NY 11252-6700
Email: james.w.haggerty@usace.army.mil

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by DATE (60 days). It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

This jurisdictional determination is valid for a period of five (5) years from the date of this letter unless new information warrants revision prior to the expiration date. If you have any questions, please contact Audrey Cotnoir at 757-549-8819 or audrey.l.cotnoir@usace.army.mil.

Sincerely,



Audrey Cotnoir, PWS
Project Manager
Eastern Virginia Regulatory Section

Enclosures:
Wetland/Waters Delineation Map
Appeal Form
Supplemental Preapplication Form

Cc:
Virginia Department of Environmental Quality, ATTN: Sheri Kattan
City of Chesapeake, ATTN: Dave Mergen
RES, ATTN: Katie Arquiette

1 INCH = 400 FEET

0 400 800 1,200 FEET

LEGEND

- APPROXIMATE PROJECT LIMITS
- STREAM LIMITS
- RELATIVELY PERMANENT WATER (RPW)
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
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Non-hydric Soils:
NONE

Unknown Soil Type:
NONE

SITE DATA:
TOTAL PROJECT AREA = 565.70 +/- AC
TOTAL WATERS OF THE U.S. = 7.21 +/- AC

STREAMS
TOTAL STREAMS = 1.26 +/- AC (5,350 +/- LF)

RELATIVELY PERMANENT WATERS
TOTAL RELATIVELY PERMANENT WATERS = 0.29 +/- AC (2,899 +/- LF)

WETLANDS
TOTAL PFO = 5.60 +/- AC
TOTAL PEM = 0.06 +/- AC
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res
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P: 713.520.5400
WWW.RES.US

PROJECT: BEDFORD SOLAR CENTER

WATERS OF THE U.S. DELINEATION MAP

CHESAPEAKE COUNTY, VIRGINIA

PROJECT MANAGER: RA
DRAWN: TB
JOB NUMBER: 5235.18
DATE: 01/29/2019
REVISIONS: NONE

Document Path: Y:\GIS\GIS_Work\Active_Jobs\5235.18_Bedford_Solar_Center\maps\5235.18_WET_SHT1_24x36_052318.mxd - Date Saved: 1/29/2019

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Bedford Solar Center, LLC	File Number: NAO-2018-01177	Date: 14 March 2019
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
U.S. Army Corps of Engineers, Norfolk District ATTN: Audrey Cotnoir (CENAO-WR-R) Great Bridge Reservation 2509 Reservation Road Chesapeake, Virginia 23322-5217 (757) 549-8819 Email: Audrey.l.cotnoir@usace.army.mil	Mr. James W. Haggerty Regulatory Program Manager (CENAD-PD-OR) U.S. Army Corps of Engineers Fort Hamilton Military Community 301 General Lee Avenue Brooklyn, New York 11252-6700 Telephone number: 347-370-4650

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

March 14, 2019

Supplemental Preapplication Information
Project Number: NAO-2018-01177

1. A search of the Virginia Department of Historic Resources data revealed the following:

   ☐ No known historic properties are located on the property.

   ☒ Tribal consultation may be required.

   ☒ The following known architectural resources are located on the property:

   131-6005, House, 1104 Bedford Street

   131-0192, 1637 Blue Ridge Road, 1645 Blue Ridge Road (Lambert Farms)

   ☒ The following known archaeological resources are located on the property:
   Numerous archeological sites are shown on the property, but all were determined ineligible for the National Register of Historic Properties by VDHR.

   ☒ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

DHR ID	Address	Restricted	Property Names
131-6012	1748 Blue Ridge Road	-	House, 1748 Blue Ridge Road (Function/Location)
131-6005	1104 Bedford Street	-	House, 1104 Bedford Street (Function/Location)
131-5994	1403 Whittamore Road	-	House, 1403 Whittamore Road (Function/Location)
131-5993	1405 Whittamore Road	-	House, 1405 Whittamore Road (Function/Location)
131-6013	1407 Whittamore Road	-	House, 1407 Whittamore Road (Function/Location)
131-5992	1409 Whittamore Rd	-	House, 1409 Whittamore Rd (Function/Location)
131-5991	1417 Whittamore Rd	-	House, 1417 Whittamore Rd (Function/Location)
131-5990	1419 Whittamore Rd	-	House, 1419 Whittamore Rd (Function/Location)
131-5989	1425 Whittamore Rd	-	House, 1425 Whittamore Rd (Function/Location)
131-5987	1437 Whittamore Rd	-	House, 1437 Whittamore Rd (Function/Location)

131-6014	1433 Whittamore Road	-	United House of Prayer for All People Cemetery (Current Name)
131-5988	1439 Whittamore Rd	-	House, 1439 Whittamore Rd (Function/Location)
131-5986	1441 Whittamore Rd	-	House, 1441 Whittamore Rd (Function/Location)
131-5985	1445 Whittamore Rd	-	House, 1445 Whittamore Rd (Function/Location)
131-5984	1451 Whittamore Rd	-	House, 1451 Whittamore Rd (Function/Location)
131-5983	1449 Whittamore Rd	-	House, 1449 Whittamore Rd (Function/Location)
131-5982	1453 Whittamore Rd	-	House, 1453 Whittamore Rd (Function/Location)
131-5981	1457 Whittamore Rd	-	House, 1457 Whittamore Rd (Function/Location)
131-5980	1461 Whittamore Rd	-	House, 1461 Whittamore Rd (Function/Location)
131-5979	1463 Whittamore Rd	-	House, 1463 Whittamore Rd (Function/Location)
131-6004	1032 Bedford Road	-	House, 1032 Bedford Street (Function/Location)
131-5978	1469 Whittamore Rd	-	House, 1469 Whittamore Rd (Function/Location)
131-5324	Lockhead Road	Unrestricted	Fentress Auxiliary Landing Field Historic District (Historic)
131-5071	Blue Ridge Road, Centerville Turnpike, Fentress Road, Whittamore Road	Unrestricted	Blue Ridge/Fentress Historic District (Historic), Centerville-Fentress Historic District (Historic/Current), Centre Hill (Historic)
131-0192	1637 Blue Ridge Road, 1645 Blue Ridge Road	-	House, 1637 Blue Ridge Road (Function/Location), Lambert Farms (Current)

NOTE:

1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries

revealed the following:

☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

☒ The following federally-listed species may occur within the vicinity of the subject property:
Northern Long-eared Bat, *Myotis septentrionali*s, Threatened

☐ The following state-listed (or other) species may occur within the vicinity of the subject property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

Wetland Delineation Report Site Information Summary

Fentress Substation - Coastal Virginia Offshore Wind Transmission Project
Parcels 0610000000952, 0610000000954, and 0610000000955
(46.5-acres; VEPCO)
City of Chesapeake, Virginia

Date
December 14, 2020

Latitude/ Longitude in Decimal Degrees using coordinate plane (NAD 1983)
36.690918, -76.190173

Has a previous delineation or JD been performed? If so please provide USACE Project Number: Unknown

Hydrologic Unit Code (HUC)
8-Digit HUC - 03010205

USGS Topographic Sheet
Fentress Quadrangle

Nearest Waterbody (example given)
Unnamed tributary to Pocaty River is located approximately 850 feet to the south.

Delineation Methods
Wetlands were delineated utilizing the 1987 United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (Manual), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (2nd Edition), and per recent guidance issued jointly by the U.S. Environmental Protection Agency and the USACE known as the Navigable Waters Protection Rule. Plant indicators were searched using the USDA NRCS Wetland Indicator Status Search tool at plants.usda.gov/core/wetlandsearch.

On-Site Investigation Date
Wetland boundary delineation and site data collection conducted on October 29, 30, and November 2, 2020.

Wetland Delineation Plan
The proposed wetland boundaries and Data Sampling Point locations are depicted on the attached Figure 7.

Wetland Investigation Results

Wetlands: Wetlands identified at the Site consist of approximately 16.31-acres of palustrine forested (PFO) wetlands and 2.86-acres of palustrine emergent (PEM) wetlands. Additional information is found in the attached Wetland Delineation Memo, dated November 6, 2020 and on the attached maps.

Stream Channels: No streams were identified within the project area.

Other Waters: Jurisdictional ditches totaling approximately 1,175 feet are located centrally along the edges of the existing developed substation and immediately adjacent to delineated wetlands at the Site. Additional information is found in the attached Wetland Delineation Memo, dated November 6, 2020 and on the attached maps.

Water bodies onsite identified as Section 10: No Section 10 waters were identified within the project area.

Uplands: The remainder of the project area was determined to be uplands. Please refer to the attached upland data forms and attached maps.

100-Year Floodplains
As depicted on the Federal Emergency Management Agency's (FEMA) on-line Flood Insurance Rate Maps # 5100340052D and 5100340053D, effective date 12/16/2014 the subject property lies in an area of minimal flood hazard (Zone X).

National Wetlands Inventory
The on-line National Wetland Inventory identifies PFO and PEM wetlands within the subject property as shown on the attached Figure 6.

USDA Soil Survey
The on-line USDA Natural Resource Conservation Service Soil Survey data for the Site is included and shown on Figure 2.

ERM

919 East Main Street
Suite 1701
Richmond, VA 23219

Telephone: +1 (804) 253 1090
Fax: +1 (804) 253 1091

www.erm.com

Memo

To	Bob Bisha
From	Paul Leeger, Pat Robblee, Jon Berkin
Date	November 6, 2020
Reference	Coastal Virginia Offshore Wind Project
Subject	Wetland Delineation at Fentress Substation Property

Environmental Resources Management (ERM) conducted a wetland delineation at Dominion Energy Virginia's Fentress Substation property, which encompasses approximately 46.5-acres off Fentress Loop in the City of Chesapeake, Virginia. The portion of the parcel developed as an existing substation was not included in the delineation. The remainder of the parcel (the Site) consists of approximately 34.8-acres of forested land, maintained utility easements, and gravel access roads. The Site occurs within City of Chesapeake tax parcel 0610000000952. Access to the Site is via a gravel access road from Fentress Loop and through a city park along an existing transmission line easement. An aerial based map depicting the Site and results and select photos of the survey area are attached.

PROPERTY DESCRIPTION

The Site is in the Coastal Plain Province in Virginia's Tidewater region. The survey area consists of approximately 27.0-acres of mixed mature deciduous-coniferous forest and 7.8-acres of maintained easements adjacent to and surrounding the existing Fentress Substation. The Site also includes a network of excavated drainage ditches intended to improve drainage over the relatively flat landscape and a gravel access road. The forested areas are dominated by swamp chestnut oak (Quercus michauxii), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). The maintained easements are dominated by herbaceous plants including giant goldenrod (Solidago gigantea), sawtooth blackberry (*rubus argutus*), broomsedge bluestem (*Andropogon virginicus*), and spotted ladysthumb (*Polygonum persicaria*).

The Site falls on the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map Fentress, Virginia. The Site is largely located within the Albemarle watershed (Watershed Unit: 03010205).

METHODOLOGY

Waters of the U.S., including wetlands, are federally protected under Section 404 of the Clean Water Act (CWA). The definition of a wetland is "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas*" (Code of Federal Regulations §230.3(t)).

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ERM identified and delineated wetlands and waters of the U.S. at the Site on October 28, 30, and November 2, 2020, in accordance with the three-parameter methodology outlined in the 1987 United States Army Corps of Engineers (*USACE) Wetlands Delineation Manual* (Manual), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*, and per recent guidance issued jointly by the U.S. Environmental Protection Agency and the USACE known as the Navigable Waters Protection Rule.

An area is classified as a wetland based on the following three parameters as determined in the above references:

- The presence of hydrophytic vegetation - Hydrophytic vegetation is determined by the dominant species present at any given data point, where each species is assigned a plant indicator status as to its preference/tolerance for wetland conditions. Data points having dominant species that are greater than 50 percent facultative or wetter are considered to meet the hydrophytic vegetation criterion.

- The presence of hydrology - Each data point is evaluated for evidence of wetland hydrology or persistent saturation or inundation of soils. The Manual identifies both primary and secondary hydrologic indicators. One primary indicator or two secondary indicators must be observed for a sample point to meet the hydrology criterion. Indicators include saturated soils in the upper 12 inches, inundation, water marks, drift lines, sediment deposits, drainage patterns, oxidized root channels in the upper 12 inches, water-stained leaves, local soil survey data, and others.

- The presence of hydric soils - Soil in each sample plot is sampled with a soil spade to a depth of at least 18 inches, or to the B horizon, whichever appears first. The delineator obtains a profile description and identifies hydric soil indicators based on soil texture(s) and soil color(s). Soil textures are determined by manual tactile sampling. Soil colors (in a moist condition) are compared to Munsell Soil-Color charts (2009 Edition, 2015 production year, Munsell Color, Grand Rapids, MI, USA) to assess hue, value, and chroma to determine if hydric characteristics are present.

To identify wetlands and waters within the Site, the area was traversed on foot. Data points were taken within the Site to verify or refute the presence of wetland soils, vegetation, and hydrology.

ERM utilized a Trimble GeoXT Global Positioning System to obtain coordinates for the wetland data points, wetland boundaries, and waterbody boundaries. This unit is capable of sub-meter accuracy (following post-processing and differential correction via a known base station) and allows the digital data to be incorporated into drawings for mapping/design purposes.

FINDINGS AND CONCLUSION

The field-based delineation identified approximately 19.17-acres of riparian wetlands and approximately 1,175 feet of presumed jurisdictional ditches within the Site (Figure 1). Wetlands identified at the Site consist of approximately 16.31-acres of palustrine forested (PFO) wetlands and 2.86-acres of palustrine emergent (PEM) wetlands as classified under the Cowardin Classification System. These features are all presumed to be jurisdictional with the USACE and the Virginia Department of Environmental Quality (DEQ).

Common vegetation in the PFO wetlands includes swamp chestnut oak (Quercus michauxii), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), sweetbay (Magnolia virginiana), giant cane (Arundinaria gigantea), and sensitive fern (*Onoclea sensibilis*). Common vegetation in the PEM wetlands includes giant goldenrod (Solidago gigantea), broomsedge bluestem (Andropogon virginicus), spotted ladysthumb (Polygonum persicaria). Soils in these wetlands exhibited multiple hydric soil indicators including: depleted below dark surface (A11), thick dark surface (A12), depleted matrix (F3), and redox dark surface (F6). Hydrology was evident in the oxidized rhizospheres in living roots, geomorphic position, FAC-neutral test, and saturated soils.

Although these findings were based upon a survey utilizing USACE-approved protocols, the USACE (Norfolk District) must make the official determinations on the presence or absence of jurisdictional wetlands and waterbodies on the Site through the jurisdictional determination process.

SP-U3F
WB-SP2F
WC-SP2E
WB-SP3E
WA-SP1F
SP-U1E
WC-SP1F
Study Area
SP-U2F

Surveyed Features

- Wetland Sample Point
- Upland Sample Point
- Jurisdictional Waters
- **Delineated Wetland**
- Emergent
- Forested

This information is for environmental review purposes only.

- Existing Fentress Substation
- Existing DOM Transmission Line
- Dominion Parcel Boundary
- Parcel Boundary

0 150 300 Feet

Coastal Virginia Offshore Wind Project

Dominion Virginia Power

Chesapeake, VA

Fentress Substation Area

Dominion Energy

MPLS M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\10\Fentress\DOM_OWT_Fentress_Sub_Survey.mxd | REVISED: 11/04/2020 | SCALE: 1:2,500 when printed at 11x17 DRAWN BY: JPB

Photo 1: View looking east at palustrine forested (PFO) wetlands at the Site from wetland data point WA-SP1F.

Photo 2: View looking north at PFO wetlands at the Site from wetland data point WB-SP2F.

Photo 3: View looking north at palustrine emergent (PEM) wetlands at the Site from wetland data point WB-SP3E.

Photo 4: View looking west at PFO wetlands at the Site from wetland data point WB-SP2F.

Photo 5: View looking northeast at palustrine emergent (PEM) wetlands at the Site from wetland data point WC-SP2E.

Photo 6: View looking northeast at upland forest from data point SP-U2F.

Photo 7: View of upland maintained easement north of the existing Fentress substation from upland data point SP-U1E.

Photo 8: View looking north at upland forest from data point SP-U3F.

Dominion Energy®

Figure 1

Site Location Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

Site Boundary

0 1,000 2,000
Feet

1:24,000

ERM

N
W E
S

This information is for environmental review purposes only.

FILE: M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\12\Fentress_DOM_OWT_Fentress_Fig1_SiteLocation.mxd | REVISED: 12/10/2020 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: 0239

FILE: M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\12\Fentress_DOM_OWT_Fentress_Fig2_Soils.mxd | REVISED: 12/10/2020 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239

Dominion Energy®

Figure 2

Soils Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

- Site Boundary
- SSURGO Soil Boundary
- Railroad

0 100 200
Feet

1:2,400

ERM

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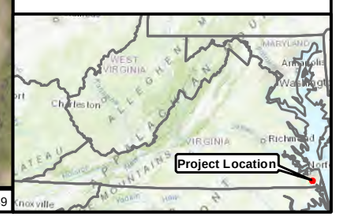


Dominion Energy®

Figure 3

Aerial Map (March 2020)

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

Site Boundary

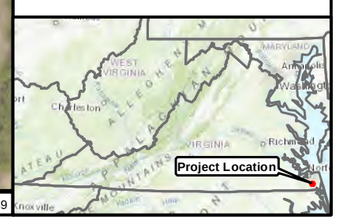
Railroad

0 100 200
Feet

1:2,400

ERM

N
W E
S



FILE: M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\12\Fentress_DOM_OWT_Fentress_Fig3_Aerial.mxd | REVISED: 12/10/2020 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239

Dominion Energy

Figure 4

USGS Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

Site Boundary

0 1,000 2,000
Feet

1:24,000

ERM

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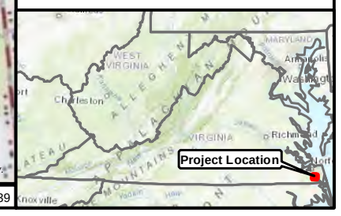
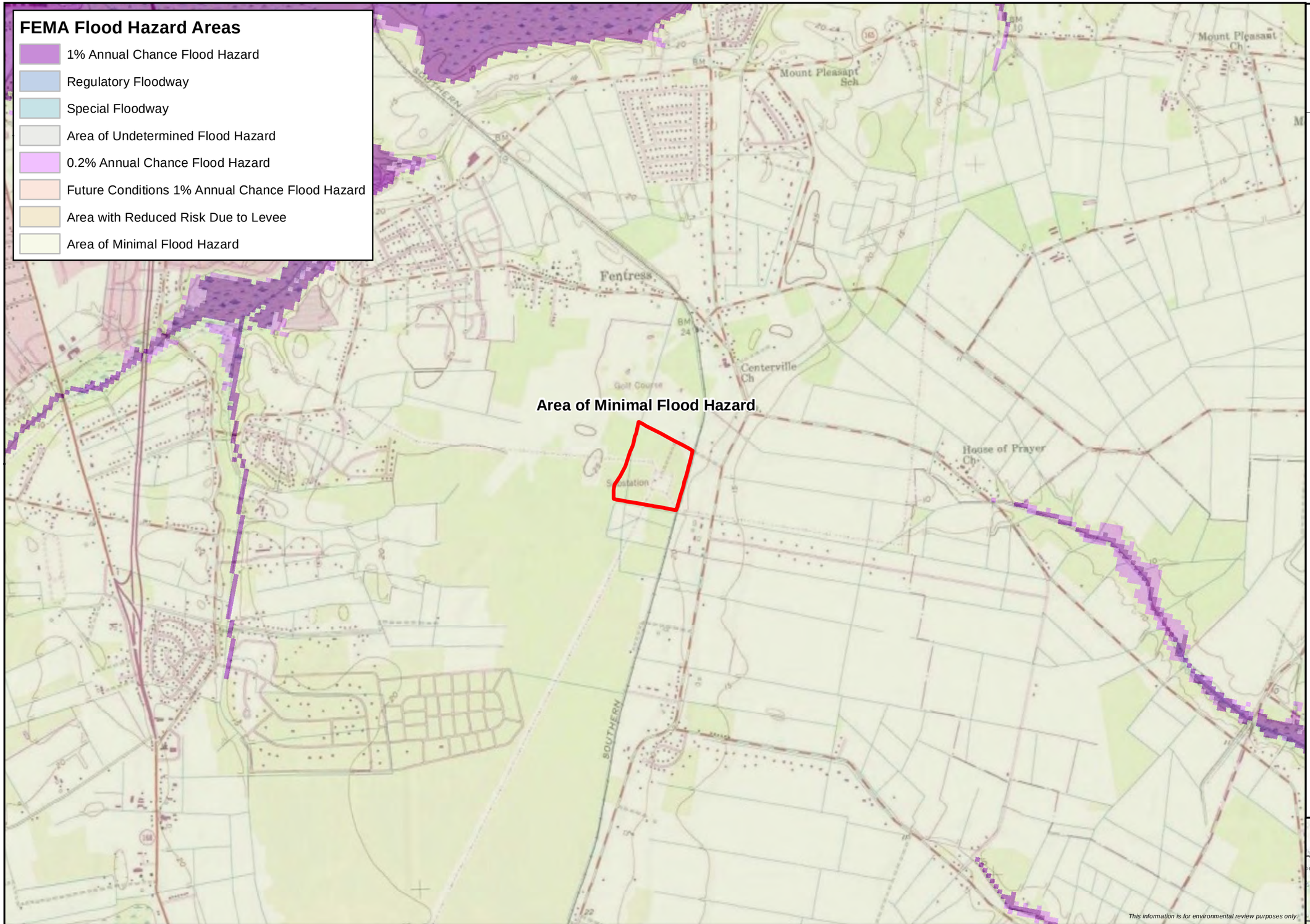


Quad Name: Fentress
Quad Date: 1986

This information is for environmental review purposes only.

FILE: M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\12\Fentress_DOM_OWT_Fentress_Fig4_USGS.mxd | REVISED: 12/10/2020 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: 0239



Dominion Energy®

Figure 5

FEMA Flood Plain Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

Site Boundary

0 1,000 2,000
Feet

1:24,000

ERM

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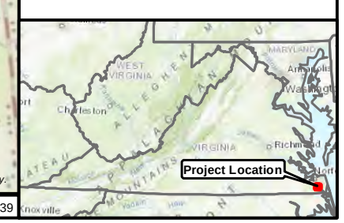

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Dominion Energy®

Figure 6

National Wetlands Inventory Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

Site Boundary
NWI Wetland
Railroad

0 250 500
Feet

1:6,000

ERM

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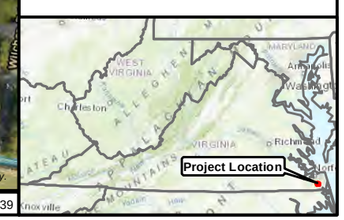
S



Dominion Energy

Figure 7

Delineation Map

Fentress Substation
Coastal Virginia Offshore Wind Transmission Project
Virginia, USA

- Site Boundary
- Railroad
- Wetland Sample Point
- Upland Sample Point
- Emergent Wetland
- Forested Wetland
- Jurisdictional Water

0 100 200
Feet

1:2,400

ERM

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FILE: M:\Clients\D-F\DOM\Offshore_Wind_ArcGIS\2020\12\Fentress_DOM_OWT_Fentress_Fig7_Delineation.mxd | REVISED: 12/10/2020 | SCALE: 1:2,400 when printed at 11x17 DRAWN BY: 0239

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
2. Pinus taeda	20	Yes	FAC
3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
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3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
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FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
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Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
2. Pinus taeda	20	Yes	FAC
3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
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6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
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4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
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- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

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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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
2. Pinus taeda	20	Yes	FAC
3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
2. Pinus taeda	20	Yes	FAC
3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
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4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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 – Atlantic and Gulf Coastal Plain Region

Project/Site: Fentress Substation Property City/County: City of Chesapeake Sampling Date: 10/30/2020

Applicant/Owner: Dominion Energy Services State: VA Sampling Point: WA-SP1F

Investigator(s): Paul Leeger, Heather Mitchell Section, Township, Range:

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

Subregion (LRR or MLRA): T153A Lat: 36.692157 Long: -76.192490 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: PFO

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along 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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ 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 _____

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

Remarks:

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

Sampling Point: WA-SP1F

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii	30	Yes	FACW
2. Pinus taeda	20	Yes	FAC
3. Acer rubrum	20	Yes	FAC
4. Quercus alba	2	No	FACU
5. Quercus rubra	2	No	FACU
6.			
	74	= Total Cover	

50% of total cover: 37 20% of total cover: 15

Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	10	Yes	FAC
2. Magnolia virginiana	5	Yes	FACW
3. Quercus rubra	3	No	FACU
4.			
5.			
6.			
	18	= Total Cover	

50% of total cover: 9 20% of total cover: 4

Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	

50% of total cover: 0 20% of total cover: 0

Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	3	x 2 =	20
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	
Column Totals:	133 (A)		415 (B)

Prevalence Index = B/A = 2.96

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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: WA-SP1F

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Silt Loam	
4-7	10 YR 4/1	100					Loam	ORs
7-20	10 YR 4/1	90	10 YR 4/6	10	C	PL	SCL	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photo 1: View looking east at palustrine forested (PFO) wetlands at the Site from wetland data point WA-SP1F.

Photo 2: View looking north at PFO wetlands at the Site from wetland data point WB-SP2F.

Photo 3: View looking north at palustrine emergent (PEM) wetlands at the Site from wetland data point WB-SP3E.

Photo 4: View looking west at PFO wetlands at the Site from wetland data point WB-SP2F.

Photo 5: View looking northeast at palustrine emergent (PEM) wetlands at the Site from wetland data point WC-SP2E.

Photo 6: View looking northeast at upland forest from data point SP-U2F.

Photo 7: View of upland maintained easement north of the existing Fentress substation from upland data point SP-U1E.

Photo 8: View looking north at upland forest from data point SP-U3F.

ATTACHMENT U-2: MAPBOOK

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

Dominion Energy

Tt

Mapbook Page

Project LOD

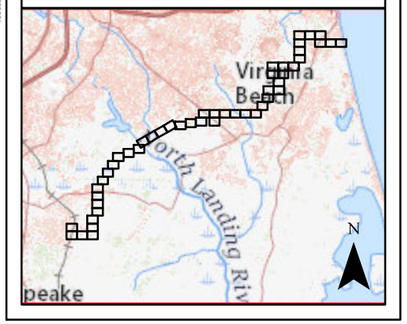
Date	5/4/2022
Projection	NAD 1983 2011 UTM Zone 18N
Personnel	Figure Prepared by: Tetra Tech Offshore GIS Group

0 0.5 1 1.5 2 Miles

0 0.5 1 1.5 Nautical Miles

0 1 2 3 Kilometers

REFERENCE MAP



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USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names

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0 100 200 300 400 Feet

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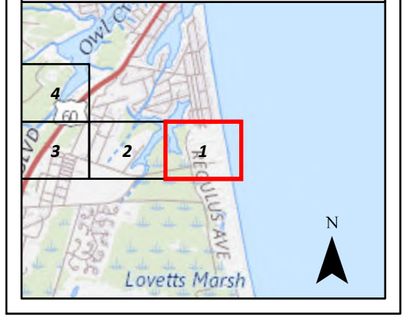

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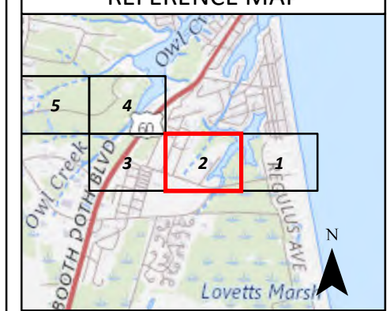

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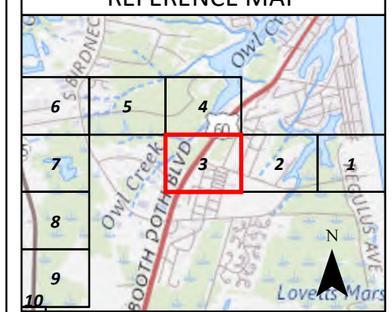

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COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

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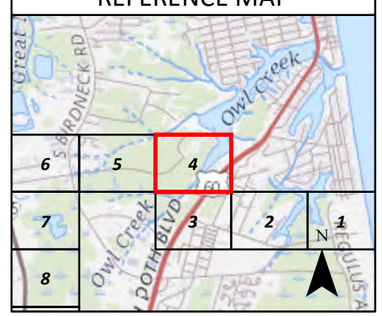

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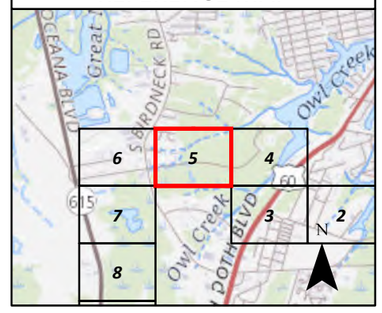

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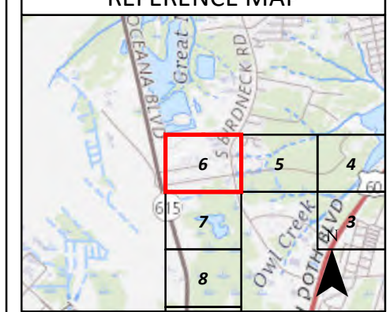

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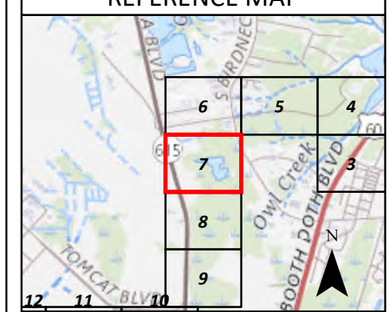

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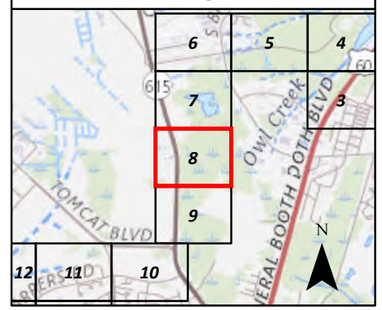

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76°0'0"W

8

9

Oceana Blvd

JC_D_112

JC_D_113

Tomcat Blvd

Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

76°0'0"W

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Personnel	Figure Prepared by: Tetra Tech Offshore GIS Group

0 100 200 300 400 Feet

0 25 50 75 100 Meters

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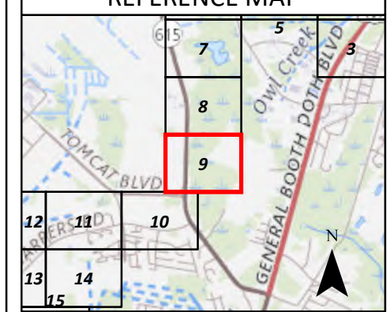

NOT FOR CONSTRUCTION

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

Dominion Energy

Tt

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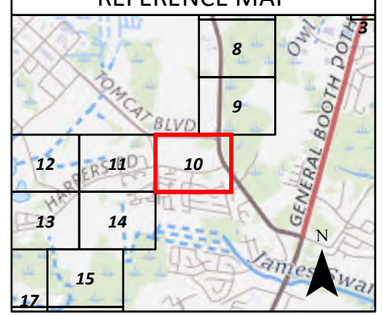

Data Sources: ESRI
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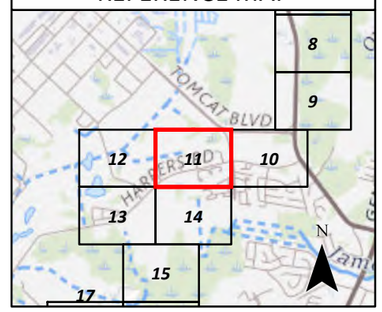

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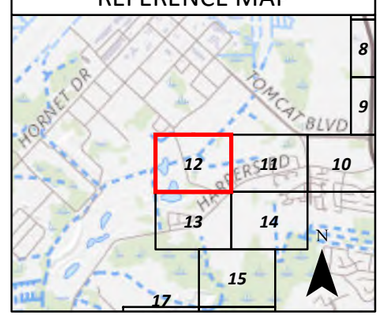

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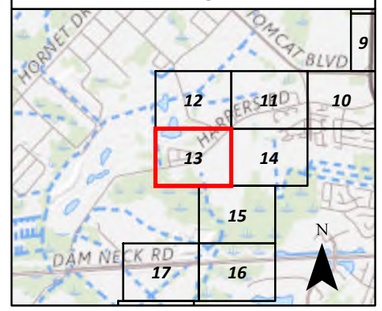

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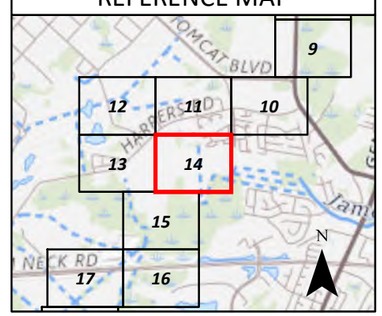

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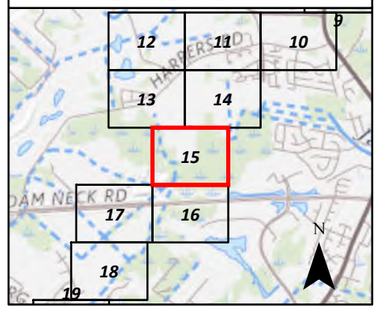

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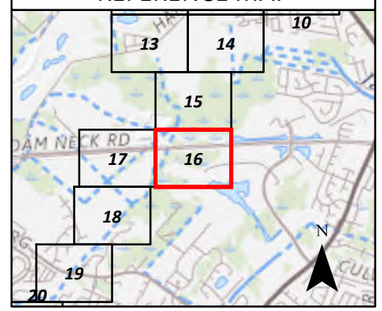

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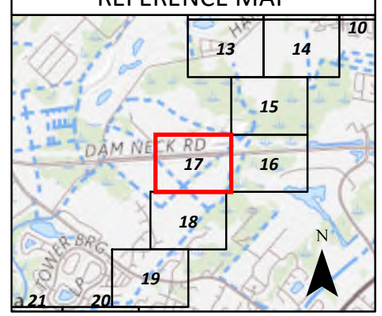

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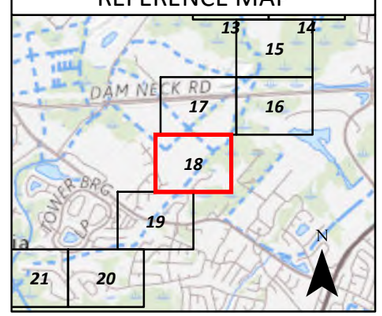

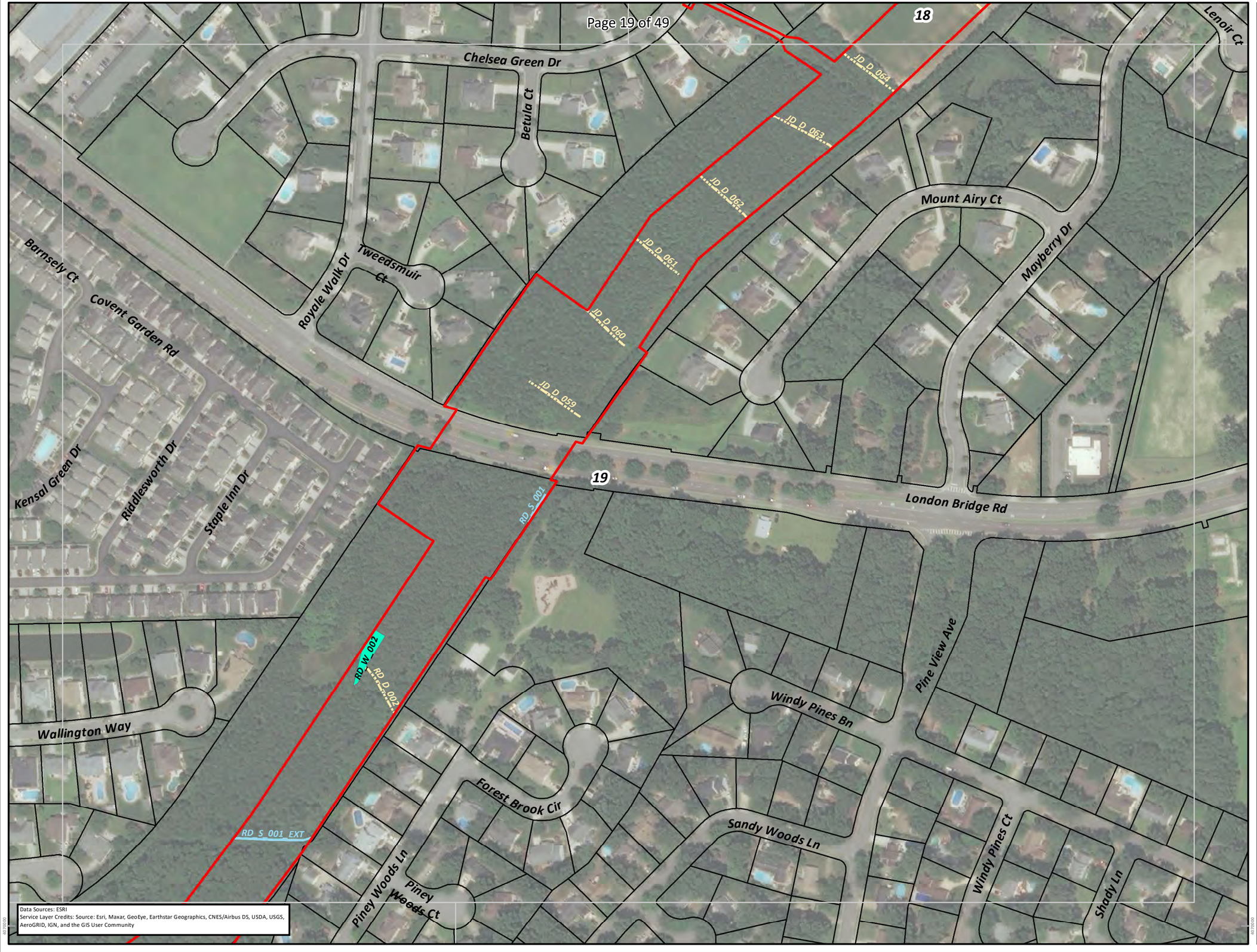

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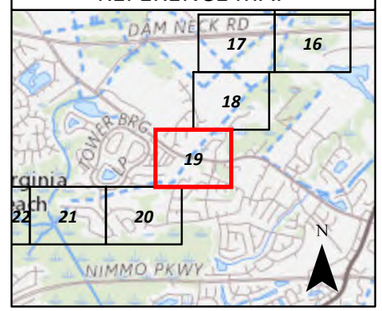

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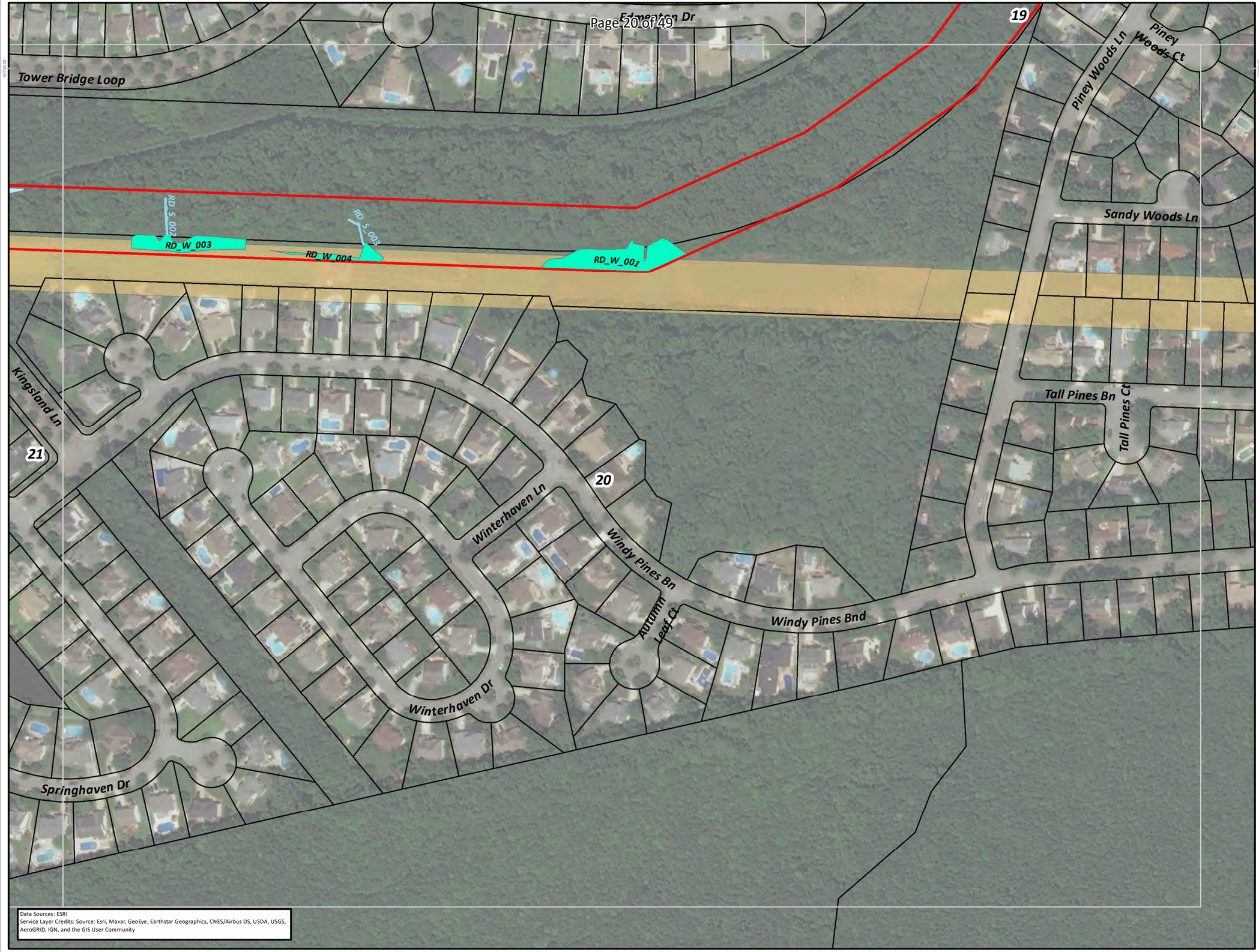

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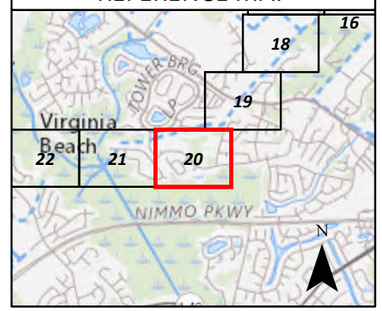

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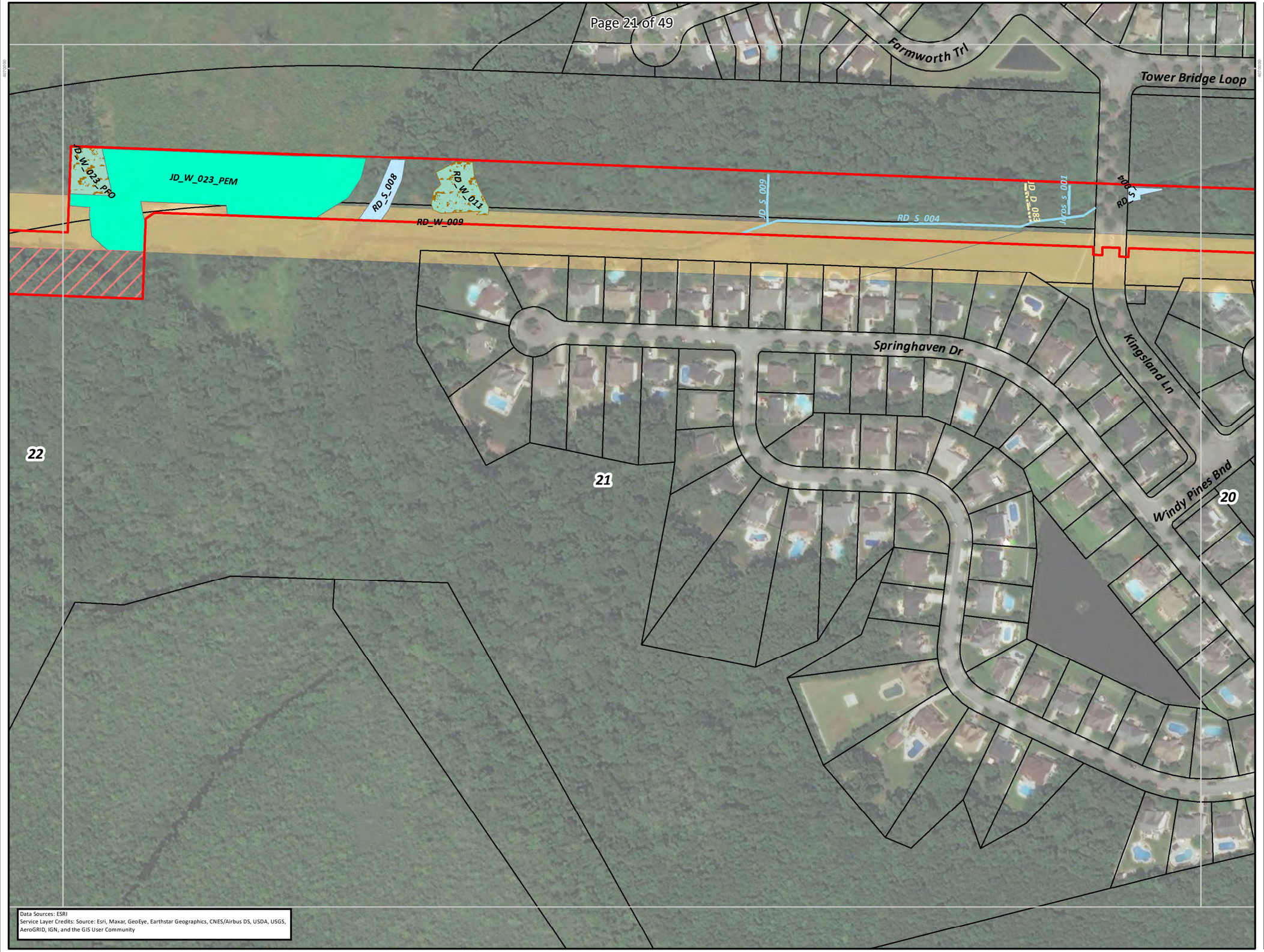

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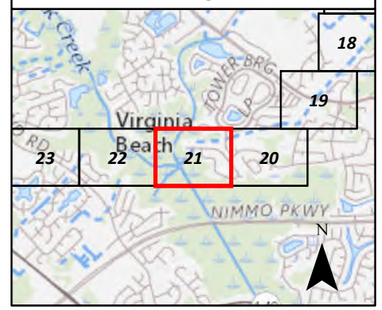

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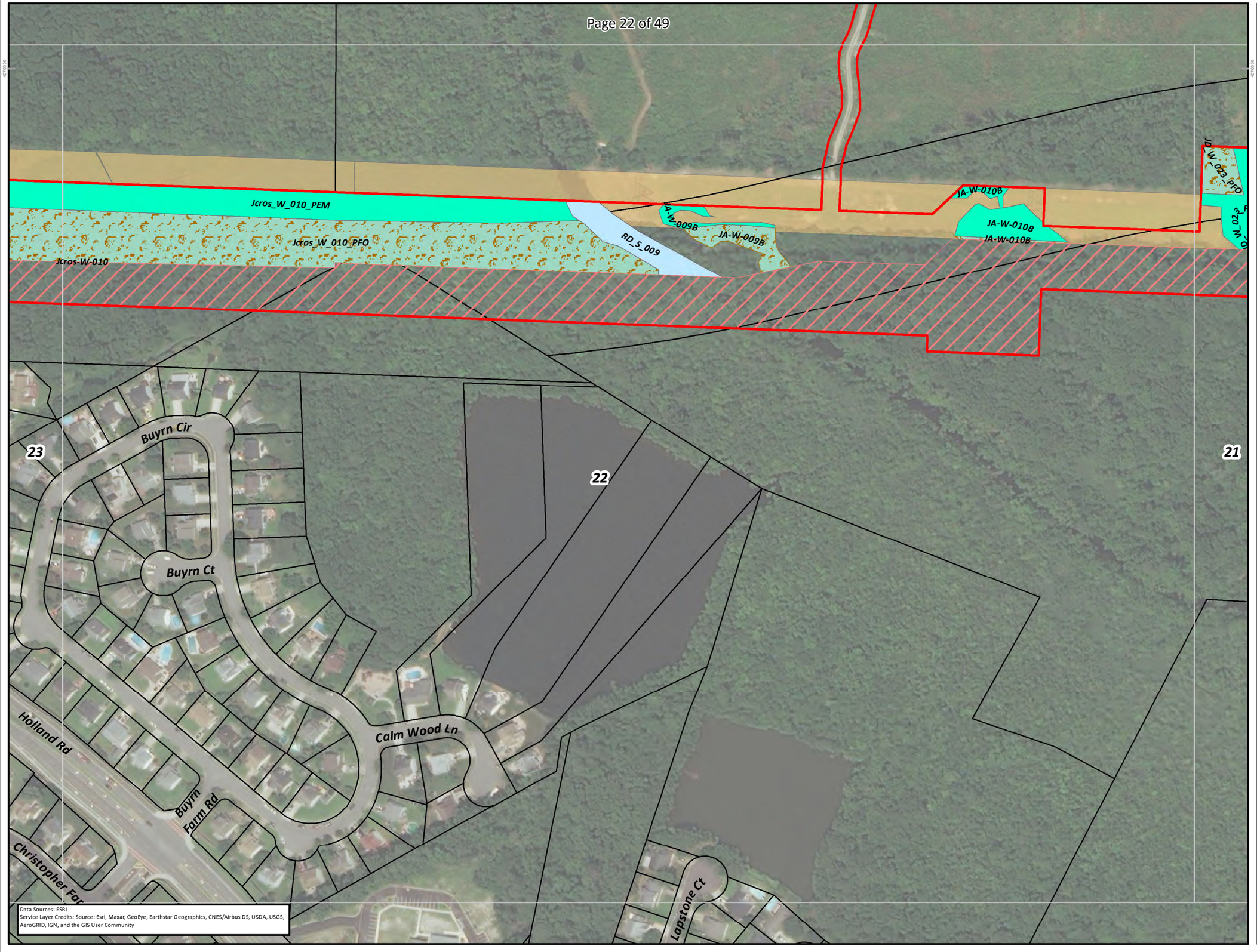

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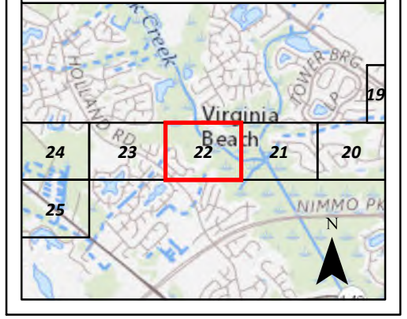

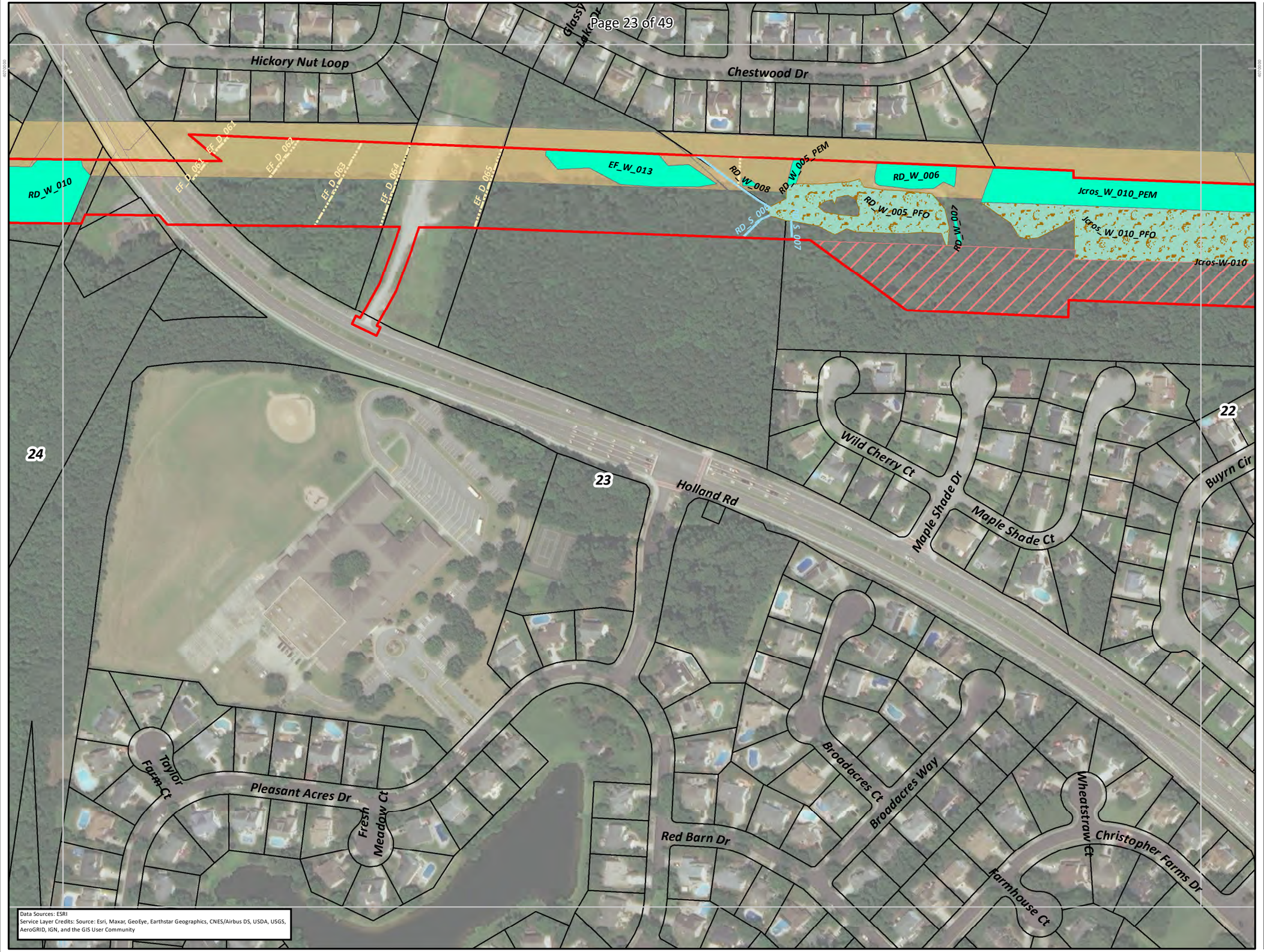

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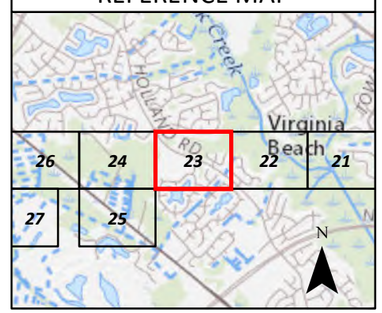

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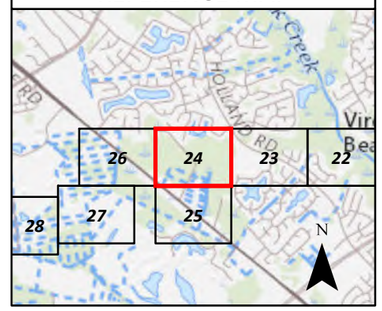

Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

NOT FOR CONSTRUCTION

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COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

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Projection	NAD 1983 2011 UTM Zone 18N
Personnel	Figure Prepared by: Tetra Tech Offshore GIS Group

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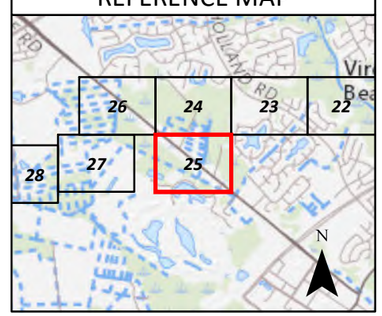

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

Dominion Energy

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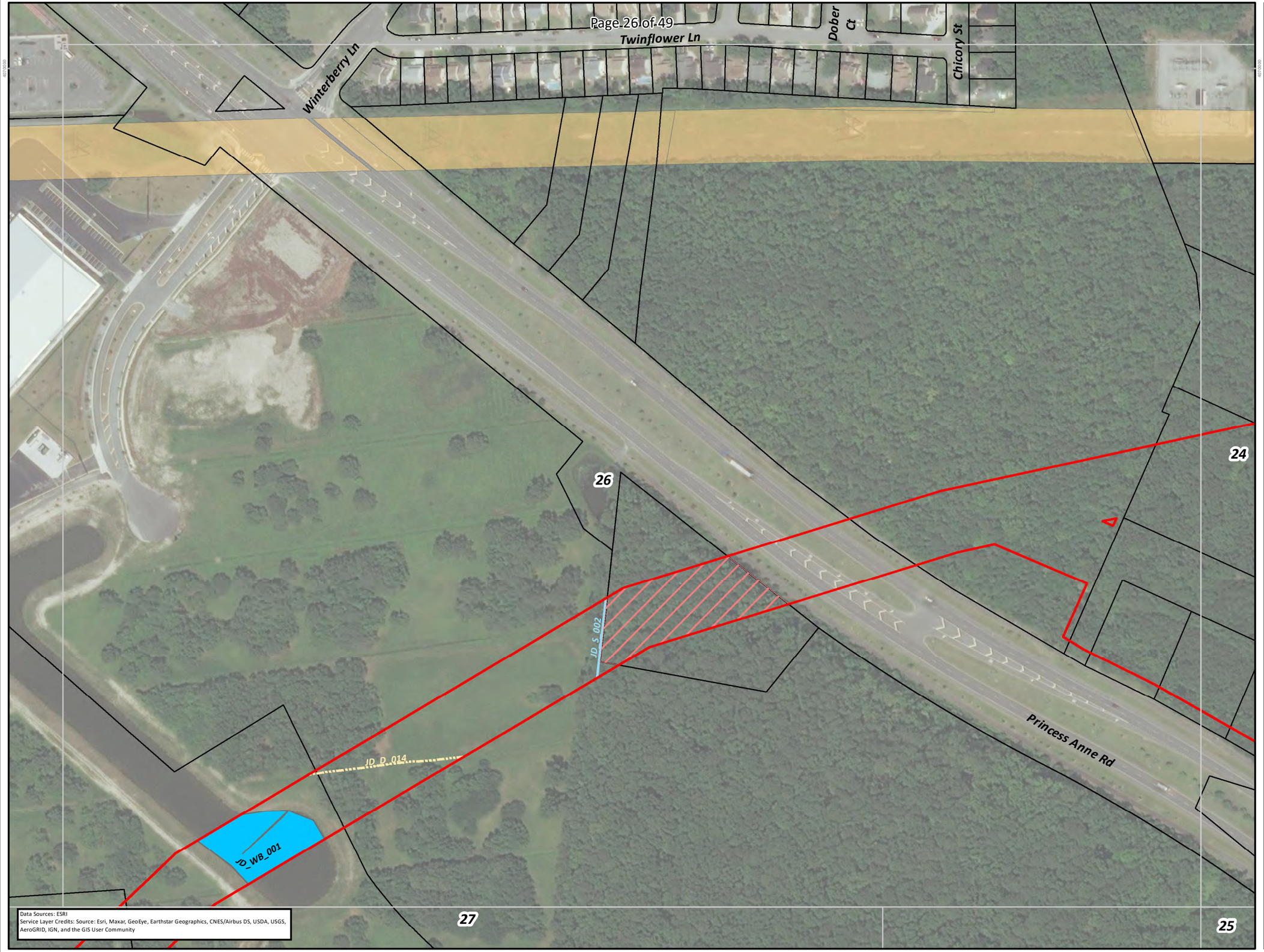

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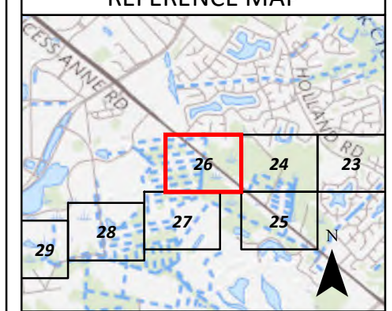

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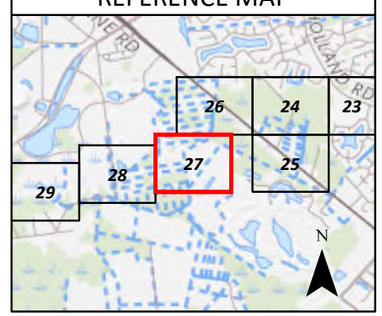

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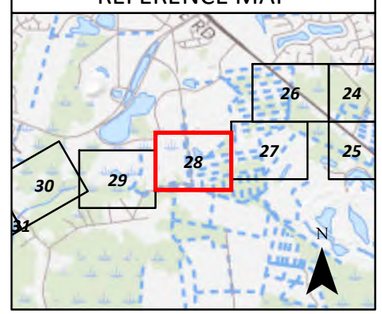

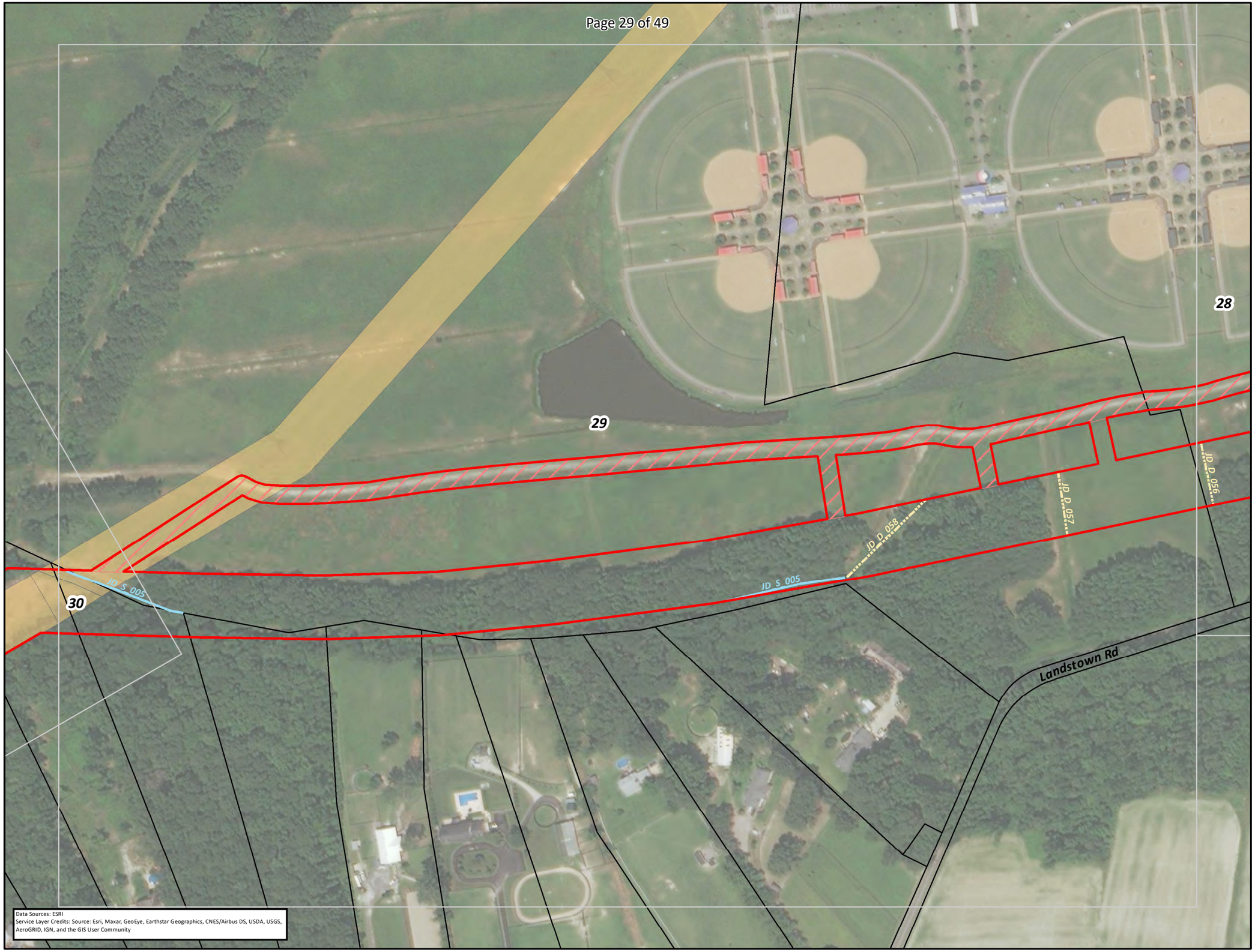

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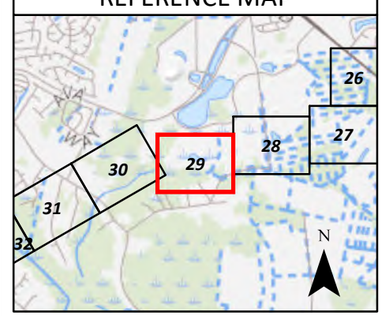

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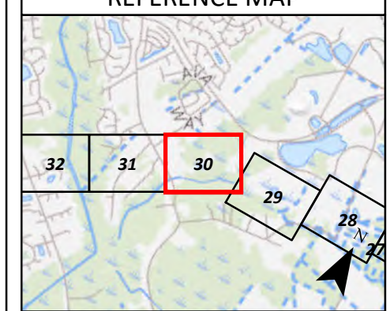

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

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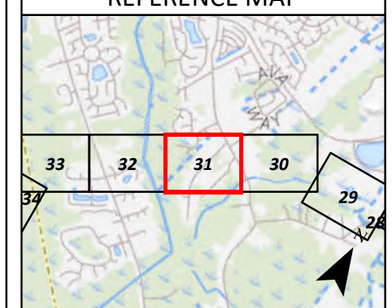

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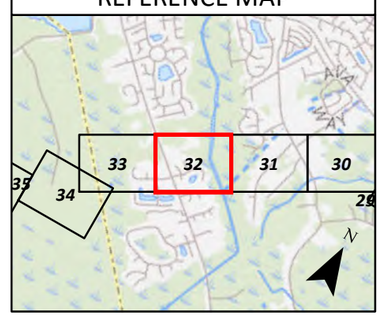

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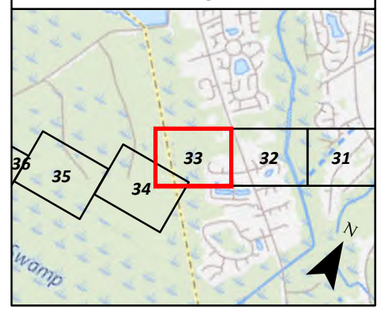

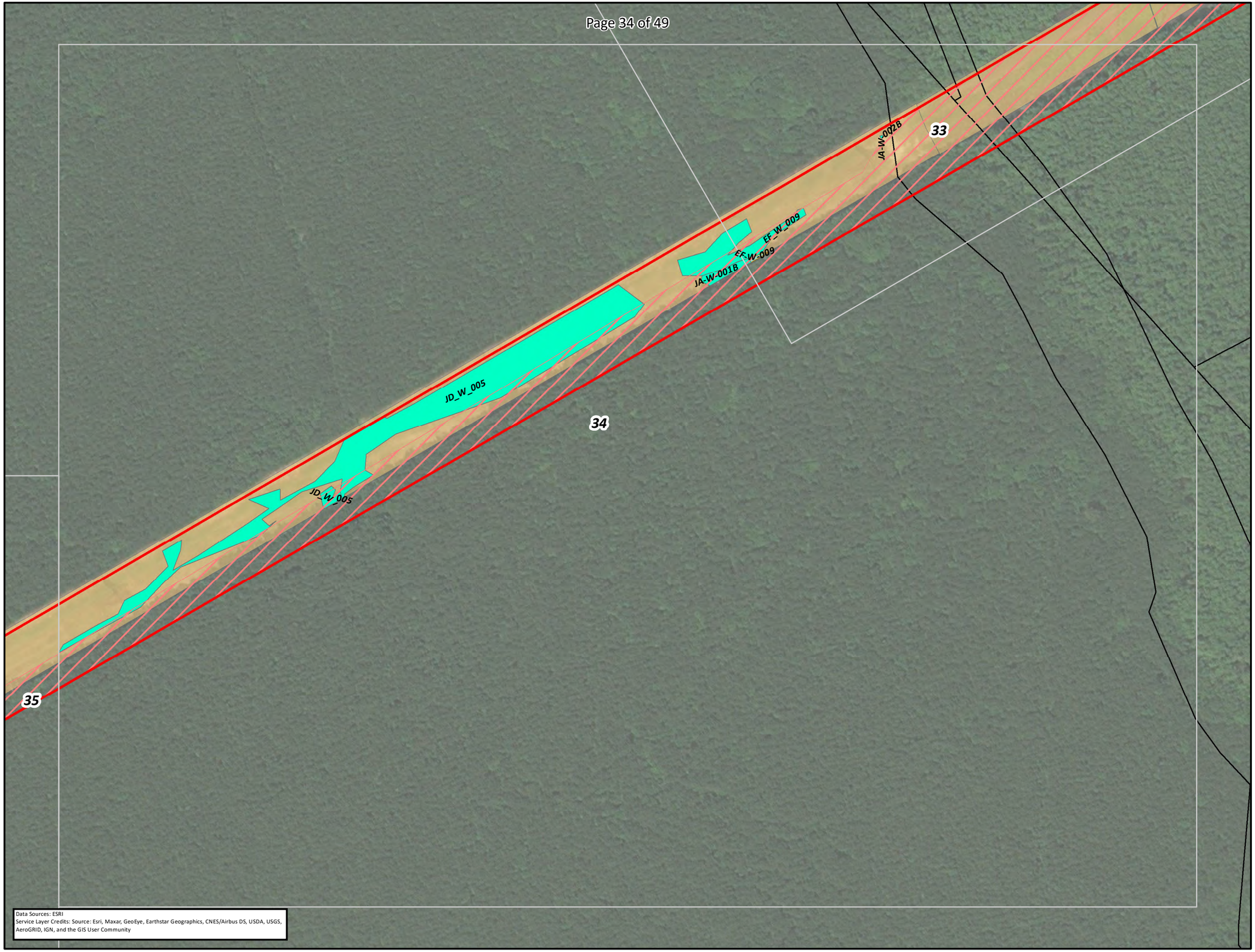

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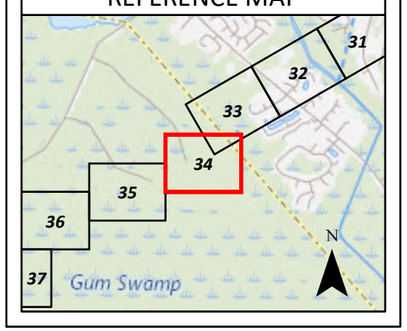

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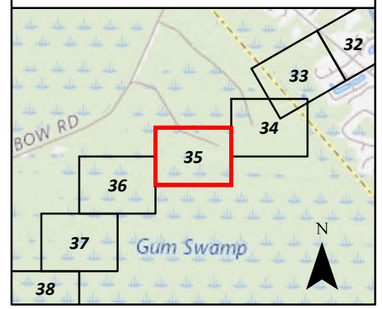

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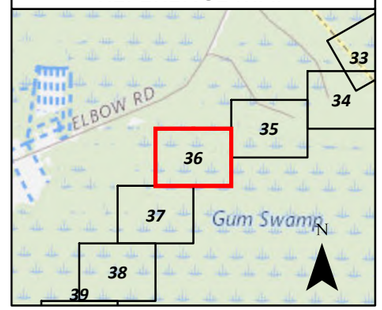

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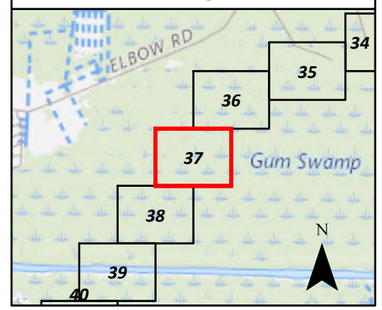

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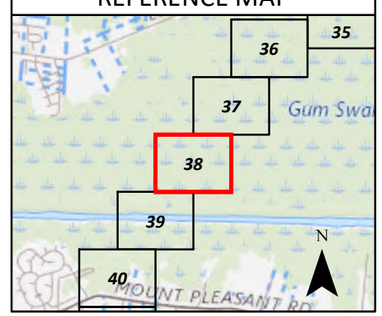

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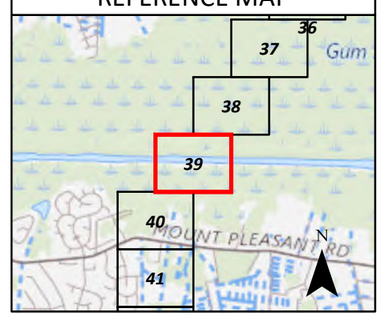

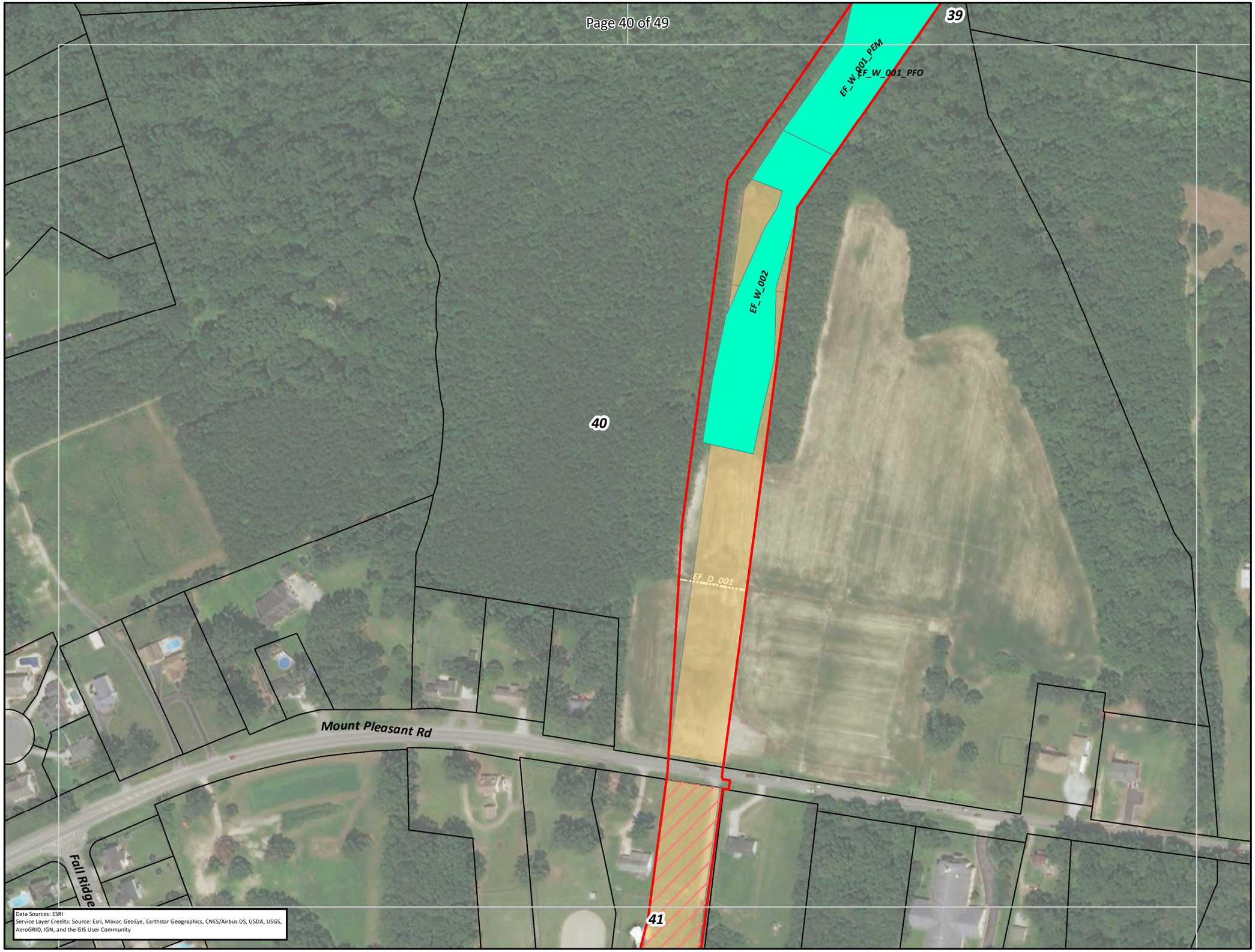

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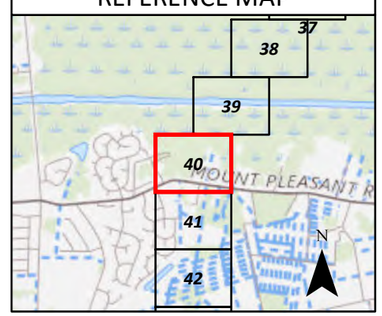
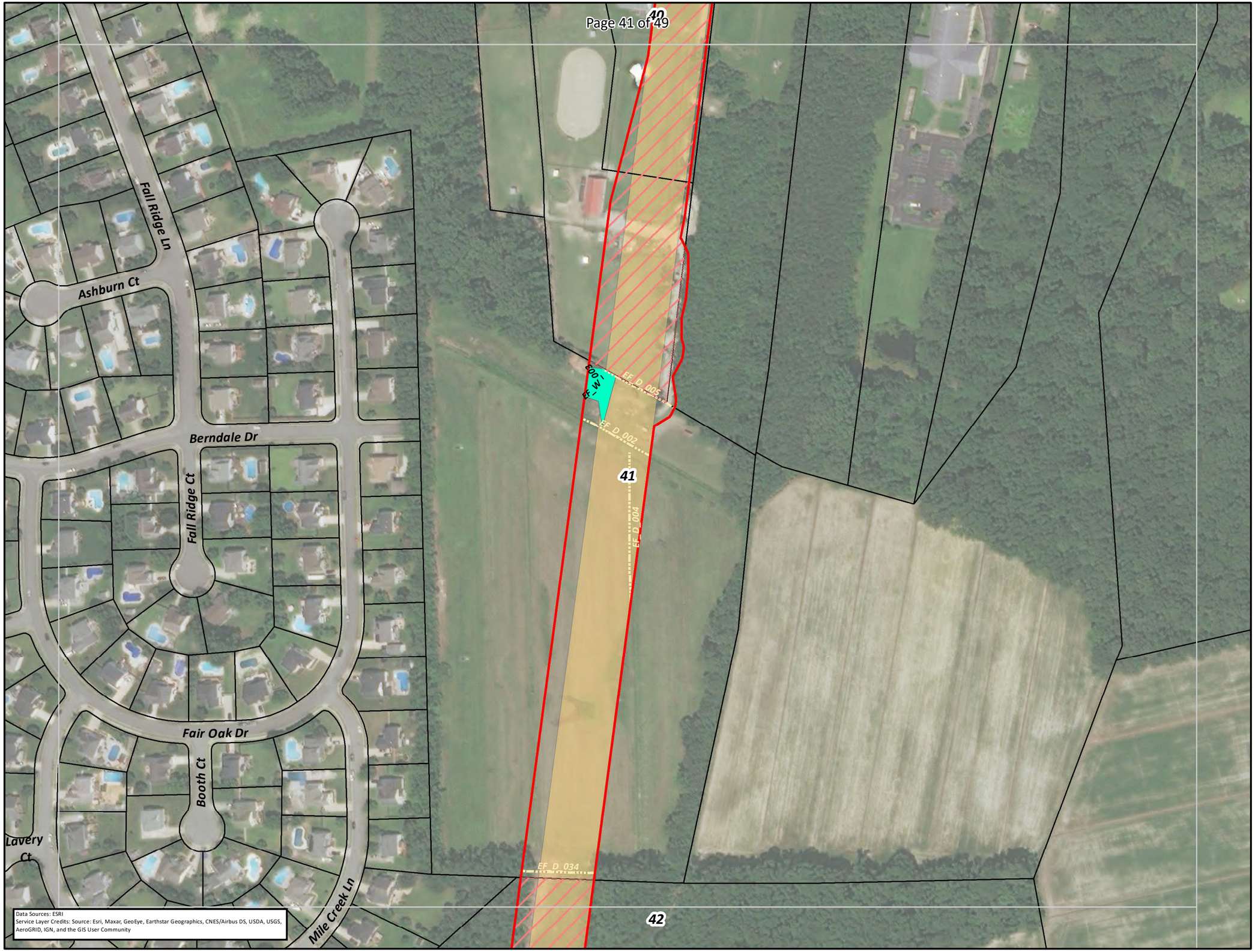
Date	5/4/2022
Projection	NAD 1983 2011 UTM Zone 18N
Personnel	Figure Prepared by: Tetra Tech Offshore GIS Group

0 100 200 300 400 Feet

0 25 50 75 100 Meters

REFERENCE MAP





Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

Dominion Energy

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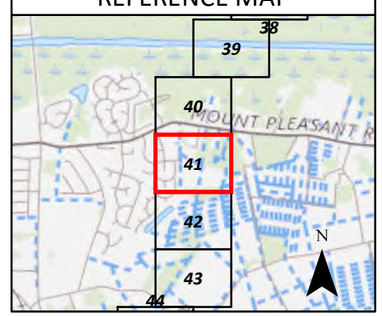

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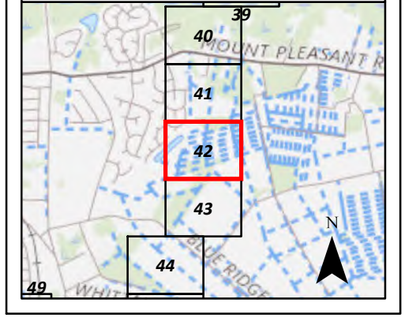

COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: CONSTRUCTION & OPERATIONS PLAN

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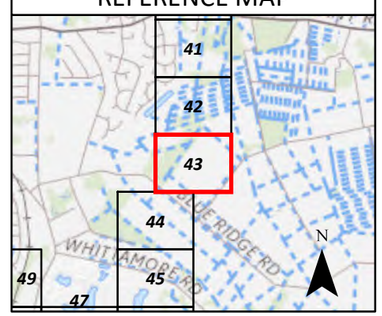

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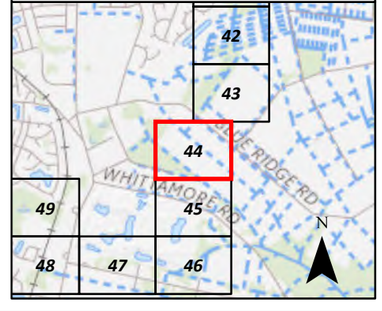

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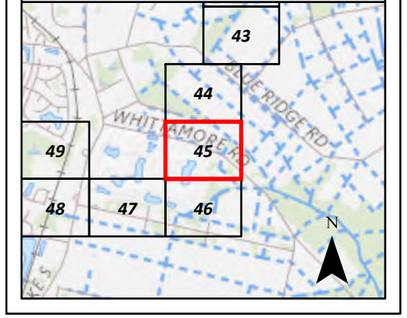

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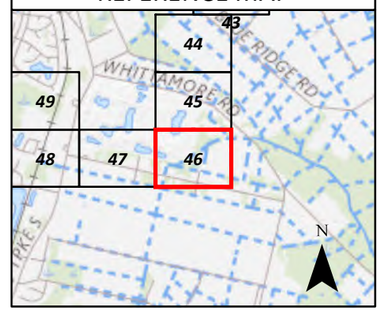

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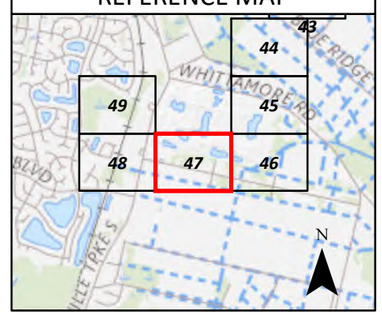

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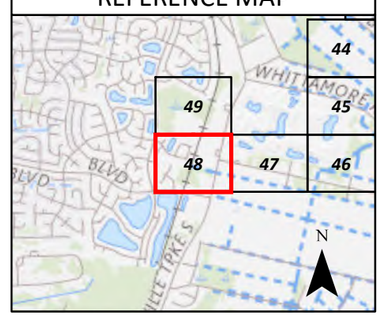

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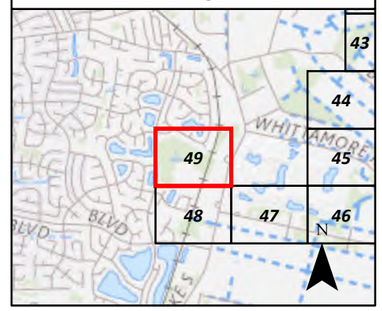


ATTACHMENT U-3: OVERSIZE TABLES

Table U-3-1: Identified Streams

Table U-3-2: Identified Wetlands

Table U-3-3: Identified NJD Aquatic Features

Aquatic Resource Report Table U-1.
Identified Streams

Stream Number[1]	Stream Reach ID	NHD Stream Name[2]	County	Latitude[3]	Longitude[3]	Flow Regime	Water Type[4]	Cowardin Class[5]	Flow Direction	HUC 12	Drainage Area (square miles)	Ordinary High Water Mark Width (feet)	Mapbook Page #
1	JCros_S_001	UNT West Neck Creek	Virginia Beach	36.770331	-76.043736	Perennial	RPW	R2	South	30102051203	<0.001	4.00	21
2	JC_S_001[7]	UNT Lake Rudee	Virginia Beach	36.818225	-75.987355	Perennial	TNW	R1	Northeast	20403040501	0.36	70.00	3
3	JC_S_003[7]	Intracoastal Waterway	Chesapeake	36.723573	-76.164077	Perennial	TNW	R1	N/A[8]	30102051201	27.20	490.00	39
4	JD_S_002	UNT North Landing River	Virginia Beach	36.768273	-76.084147	Ephemeral	NRPW	R6	South	30102051202	<0.001	0.50	26
5	JD_S_005	UNT North Landing River	Virginia Beach	36.759497	-76.099451	Perennial	RPW	R2	West	30102051202	1.34	10.00	29, 30
6	JD_S_009	UNT North Landing River	Chesapeake	36.770464	-76.045993	Intermittent	RPW	R4	South	30102051203	0.00	3.00	21
7	RD_S_001	UNT West Neck Creek	Virginia Beach	36.771812	-76.035652	Intermittent	RPW	R4	East	30102051203	0.50	6.00	19
8	RD_S_002	UNT West Neck Creek	Virginia Beach	36.770368	-76.042025	Ephemeral	NRPW	R6	Northeast	30102051203	0.11	10.00	20
9	RD_S_003	UNT West Neck Creek	Virginia Beach	36.770291	-76.040534	Ephemeral	NRPW	R6	Northwest	30102051203	<0.001	4.00	20
10	RD_S_004	UNT West Neck Creek	Virginia Beach	36.770497	-76.043066	Perennial	RPW	R2	Northwest	30102051203	<0.001	8.00	21
11	RD_S_005	UNT West Neck Creek	Virginia Beach	36.770350	-76.063370	Perennial	RPW	R6	Southeast	30102051203	<0.001	4.00	23
12	RD_S_006	UNT West Neck Creek	Virginia Beach	36.770108	-76.063184	Ephemeral	NRPW	R6	Northeast	30102051203	0.02	3.00	23
13	RD_S_007	UNT West Neck Creek	Virginia Beach	36.770073	-76.062926	Ephemeral	NRPW	R6	North	30102051203	<0.001	3.00	23
14	RD_S_008	UNT West Neck Creek	Virginia Beach	36.770496	-76.048759	Perennial	RPW	R2	South	30102051203	4.07	19.00	21
15	RD_S_009	West Neck Creek	Virginia Beach	36.770176	-76.055751	Perennial	RPW	R2	Southeast	30102051203	8.82	20.00	29
16	EF_D_002	UNT Pocaty River	Chesapeake	36.713086	-76.168114	Intermittent	RPW	R4	Southeast	30102051201	<0.001	7.00	41
17	EF_D_004	UNT Pocaty River	Chesapeake	36.713079	-76.168166	Intermittent	RPW	R4	North	30102051201	0.067	2.50	41
18	EF_D_013	UNT Pocaty River	Chesapeake	36.700877	-76.169709	Intermittent	RPW	R4	Southeast	30102051204	<0.001	8.00	43

Notes:

1 Streams with braided channels, streams that have different flow regimes (e.g. ephemeral and intermittent) within the surveyed reach, and NHD named streams with different field stream reach identification names are counted as single streams.

2 From USGS NHD (2019); see References. For identified streams without an NHD name, the identified stream was given the name, “Unnamed Tributary (UNT)”, of the first named receiving waterbody.

3 In decimal degrees.

4 RPW = Relatively Permanent Waters
NRPW = Non-Relatively Permanent Waters
TNW = Traditional Navigable Waters

5 From Cowardin et al. 1979; see References.

6 Stream Designated Use Under 9VAC25-260-10.A.
Navigable Waters of the U.S. under Section 10 of the Rivers and Harbors Act

7 Waterways were inaccessible in the field, therefore were delineated using aerial imagery and LiDAR

Aquatic Resource Report Table U-2.
Identified Wetlands

Wetland Number[1]	Wetland ID	County	Latitude[2]	Longitude[2]	Cowardin Class[3]	HGM[4]	Water Type[5]	Associated Waterbodies	Size (Acres)[6]	Size (square feet)[6]	Open/Closed Boundary	Mapbook Page #
1	EF_W_001_PFO	Chesapeake	36.720139	-76.166496	PEM	Riverine	RPWWD	Intracoastal Waterway	4.48	195,297.31	Open	39, 40
2	EF_W_001-PEM	Chesapeake	36.720743	-76.166526	PFO	Riverine	RPWWD	Intracoastal Waterway	0.00	139.82	Open	39, 40
3	EF_W_002	Chesapeake	36.718323	-76.167437	PEM	Riverine	RPWWD	Intracoastal Waterway	1.59	69,196.17	Closed	40
4	EF_W_003	Chesapeake	36.713501	-76.168334	PEM	Depressional	RPWWD	UNT Pocaty River	0.11	69,196.17	Open	41
5	EF_W_004	Chesapeake	36.700803	-76.169973	PEM	Depressional	RPWWN	UNT Pocaty River	0.15	4,738.11	Open	43
6	EF_W_005	Chesapeake	36.701230	-76.169645	PEM	Depressional	RPWWN	UNT Pocaty River	0.05	6,410.88	Open	43
7	EF_W_006	Chesapeake	36.701516	-76.170189	PEM	Depressional	RPWWN	UNT Pocaty River	0.32	2,203.46	Open	43
8	EF_W_008_PEM	Chesapeake	36.741368	-76.143535	PEM	Slope	TNWW	Gum Swamp	27.47	13,927.47	Open	35, 36, 37, 38, 39
9	EF_W_008_PFO	Chesapeake	36.741370	-76.143621	PFO	Slope	TNWW	Gum Swamp	7.06	1,196,503.21	Open	35, 36, 37, 38, 39
10	EF_W_009	Chesapeake	36.746099	-76.133218	PEM	Slope	RPWWN	UNT North Landing River	0.27	307,355.73	Open	33, 34
11	EF_W_013	Virginia Beach	36.770597	-76.064658	PEM	Depressional	RPWWN	UNT West Neck Creek	0.42	11,783.57	Closed	23
12	JD_W_004	Chesapeake	36.742982	-76.139637	PEM	Slope	RPWWD	Gum Swamp	0.11	4,988.99	Closed	35
13	JD_W_005	Chesapeake	36.744654	-76.136382	PEM	Slope	RPWWD	Gum Swamp	1.61	70,054.35	Closed	34, 35
14	JD_W_006	Chesapeake	36.747150	-76.132314	PFO	Riverine	RPWWD	Stumpy Lake, North Landing River	0.00	5.56	Open	34
15	JD_W_015	Virginia Beach	36.818569	-75.988490	PFO	Lacustrine	RPWWD	Lake Rudee	0.63	27,596.03	Open	3,4
16	JD_W_016	Virginia Beach	36.819893	-75.990090	PFO	Riverine	RPWWD	UNT Lake Rudee	4.25	185,011.85	Open	4, 5
17	JD_W_019	Virginia Beach	36.817835	-75.986478	E2EM	Lacustrine	RPWWD	Lake Rudee	0.94	40,854.63	Open	3
18	JD_W_023_PEM	Virginia Beach	36.770347	-76.051416	PEM	Slope	RPWWD	West Neck Creek	1.90	82,899.15	Open	21, 22
19	JD_W_023_PFO	Virginia Beach	36.770590	-76.051505	PFO	Slope	RPWWD	West Neck Creek	0.20	8,503.12	Open	21, 22
20	RD_W_001	Virginia Beach	36.769935	-76.039152	PEM	Slope	RPWWN	Unknown	0.31	13,481.70	Open	20
21	RD_W_002	Virginia Beach	36.772899	-76.034937	PEM	Slope	RPWWN	UNT West Neck Creek	0.06	2,704.28	Open	19
22	RD_W_003	Virginia Beach	36.770187	-76.042015	PEM	Slope	RPWWN	UNT West Neck Creek	0.16	7,141.45	Closed	20
23	RD_W_004	Virginia Beach	36.770044	-76.040541	PEM	Slope	RPWWN	Unknown	0.07	2,891.66	Closed	20
24	RD_W_005_PEM	Virginia Beach	36.770154	-76.062632	PEM	Slope	RPWWN	UNT West Neck Creek	0.03	1,227.07	Closed	23
25	RD_W_005_PFO	Virginia Beach	36.770336	-76.062122	PFO	Slope	RPWWD	UNT West Neck Creek	0.73	31,735.91	Closed	23
26	RD_W_006	Virginia Beach	36.770372	-76.062151	PEM	Slope	RPWWN	UNT West Neck Creek	0.20	8,680.43	Closed	23
27	RD_W_007	Virginia Beach	36.770115	-76.061667	PEM	Depressional	RPWWN	UNT West Neck Creek	0.01	596.08	Closed	23
28	RD_W_008	Virginia Beach	36.770356	-76.063256	PEM	Slope	RPWWN	UNT West Neck Creek	0.01	416.13	Closed	23
29	RD_W_009	Virginia Beach	36.776442	-76.031103	PEM	Slope	RPWWN	UNT West Neck Creek	0.01	312.89	Closed	21
30	RD_W_010	Virginia Beach	36.770363	-76.068686	PEM	Slope	RPWWN	Unknown	0.60	26,156.67	Open	23, 24
31	RD_W_011	Virginia Beach	36.770314	-76.048240	PFO	Slope	RPWWN	UNT West Neck Creek	0.24	10,516.11	Closed	21
32	JC_W_101	Virginia Beach	36.800897	-76.004192	PEM	Slope	ISOLATE	Isolated	0.02	693.97	Open	10
33	JC_W_1001	Virginia Beach	36.819082	-76.000969	PFO	Slope	RPWWN	Unknown	0.02	1,064.51	Open	10
34	Jcros_W_010_PEM	Virginia Beach	36.770091	-76.060630	PEM	Riverine	RPWWD	West Neck Creek	2.24	97,508.97	Open	22, 23
35	Jcros_W_010_PFO	Virginia Beach	36.770091	-76.060630	PFO	Riverine	RPWWD	West Neck Creek	4.07	177,157.06	Open	22, 23

Notes:

1 Wetlands with multiple contiguous Cowardin types (e.g. PEM and PSS) are considered a single wetland system and are counted as one wetland.

2 In decimal degrees. Coordinates show wetland test pit locations.

3 PEM = Palustrine Emergent
PFO = Palustrine Forested
PSS = Palustrine Scrub-Shrub
PUB = Palustrine Unconsolidated Bottom

4 HGM = Hydrogeomorphic

5 RPWWD = Wetlands directly abutting Relatively Permanent Waters (RPWs) that flow directly or indirectly into Traditional Navigable Waterways (TNWs)
RPWWN = Wetlands adjacent but not directly abutting RPWs that flow directly or indirectly into TNWs
NRPWW = Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
Isolate = Isolated (interstate or intrastate) waters, including isolated wetlands

6 Size of wetlands with open boundaries may be larger than shown in this table. Wetland size shown is the size of the wetland delineated and illustrated on Aquatic Resource Location Map.

Aquatic Resource Report Table U-3.
Identified Non-JD Features

Ditch Number	Ditch ID	County	Latitude[2]	Longitude[3]	Flow Regime	Water Type[4]	Flow Direction	Ordinary High Water Mark Width (feet)	Top of Bank Width	Mapbook Page #
1	EF_D_001	Chesapeake	36.717404	-76.1670901	Ephemeral	NRPW	West	3.00	5.00	40
2	EF_D_003	Chesapeake	36.7163504	-76.167769	Ephemeral	NRPW	No data	1.00	1.00	40
3	EF_D_005	Chesapeake	36.7135525	-76.1683479	Ephemeral	NRPW	Southeast	1.00	5.00	41
4	EF_D_006	Chesapeake	36.688671	-76.185947	Ephemeral	NRPW	No data	0.00	13.00	48
5	EF_D_007	Chesapeake	36.688647	-76.187821	Ephemeral	NRPW	No data	0.00	3.50	48
6	EF_D_010	Chesapeake	36.6991464	-76.1698884	Ephemeral	NRPW	No data	3.00	4.00	44
7	EF_D_011	Chesapeake	36.700165	-76.170037	Ephemeral	NRPW	No data	0.00	0.00	43
8	EF_D_012	Chesapeake	36.699958	-76.169736	Ephemeral	NRPW	No data	0.00	3.50	43
9	EF_D_014	Chesapeake	36.701354	-76.169647	Ephemeral	NRPW	No data	0.00	3.50	43
10	EF_D_015	Chesapeake	36.701892	-76.170069	Ephemeral	NRPW	No data	0.00	3.50	43
11	EF_D_034	Virginia Beach	36.737154	-76.0844721	Ephemeral	NRPW	No data	0.00	3.00	41
12	EF_D_061	Virginia Beach	36.7706861	-76.0669395	Ephemeral	NRPW	Northeast	0.00	6.00	23
13	EF_D_062	Virginia Beach	36.7706741	-76.0665306	Ephemeral	NRPW	Northeast	0.00	6.00	23
14	EF_D_063	Virginia Beach	36.7706712	-76.0660662	Ephemeral	NRPW	Northeast	0.00	8.00	23
15	EF_D_064	Virginia Beach	36.770356	-76.065869	Ephemeral	NRPW	Northeast	0.00	8.00	23
16	EF_D_065	Virginia Beach	36.770025	-76.065298	Ephemeral	NRPW	Northeast	0.00	8.00	23
17	JC_D_101	Virginia Beach	36.798326	-76.021536	Ephemeral	NRPW	No data	1.00	2.00	12
18	JC_D_102	Virginia Beach	36.799045	-76.023659	Ephemeral	NRPW	South	3.00	5.00	12
19	JC_D_103	Virginia Beach	36.797467	-76.022861	Ephemeral	NRPW	South	5.00	10.00	12
20	JC_D_104	Virginia Beach	36.79728	-76.022723	Ephemeral	NRPW	Southeast	3.00	10.00	13
21	JC_D_105	Virginia Beach	36.795811	-76.023016	Ephemeral	NRPW	No data	5.00	10.00	13
22	JC_D_106	Virginia Beach	36.796686	-76.022246	Ephemeral	NRPW	South	5.00	10.00	13
23	JC_D_107	Virginia Beach	36.796772	-76.022173	Ephemeral	NRPW	No data	1.00	4.00	13
24	JC_D_108	Virginia Beach	36.800046	-76.010429	Ephemeral	NRPW	Southeast	0.00	5.00	10
25	JC_D_109	Virginia Beach	36.799857	-76.009207	Ephemeral	NRPW	Southeast	0.00	7.00	10
26	JC_D_110	Virginia Beach	36.799566	-76.006823	Ephemeral	NRPW	East	3.00	7.00	10
27	JC_D_111	Virginia Beach	36.799902	-76.004971	Ephemeral	NRPW	East	0.00	5.00	10
28	JC_D_112	Virginia Beach	36.804103	-76.004634	Ephemeral	NRPW	South	4.00	8.00	9
29	JC_D_113	Virginia Beach	36.803987	-76.004539	Ephemeral	NRPW	East	1.00	3.00	9
30	JC_D_114	Virginia Beach	36.810768	-76.004524	Ephemeral	NRPW	East	5.00	9.00	8
31	JC_D_115	Virginia Beach	36.819205	-76.000409	Ephemeral	NRPW	East	0.50	2.00	6
32	Jcros_D_006	Virginia Beach	36.804103	-76.004634	Ephemeral	NRPW	South	0.00	4.00	14, 15
33	Jcros_D_007	Virginia Beach	36.803987	-76.004539	Ephemeral	NRPW	South	0.00	4.00	14, 15
34	Jcros_D_008	Virginia Beach	36.79159797	-76.0177071	Ephemeral	NRPW	South	0.00	4.00	14, 15
35	Jcros_D_009	Virginia Beach	36.791454	-76.017087	Ephemeral	NRPW	South	0.00	4.00	14, 15
36	Jcros_D_010	Virginia Beach	36.792589	-76.016579	Ephemeral	NRPW	South	0.00	4.00	14, 15
37	Jcros_D_011	Virginia Beach	36.791514	-76.018157	Ephemeral	NRPW	West	0.00	0.00	15
38	JD_D_001	Chesapeake	36.688534	-76.1871415	Ephemeral	NRPW	No data	0.00	3.50	48
39	JD_D_014	Virginia Beach	36.766688	-76.082629	Ephemeral	NRPW	East	0.00	5.00	27
40	JD_D_016	Virginia Beach	36.7650408	-76.085776	Ephemeral	NRPW	East	0.00	4.00	27
41	JD_D_017	Virginia Beach	36.764351	-76.086121	Ephemeral	NRPW	East	0.00	4.00	27
42	JD_D_018	Virginia Beach	36.763837	-76.087265	Ephemeral	NRPW	No data	No data	No data	27
43	JD_D_019	Virginia Beach	36.762871	-76.08801	Ephemeral	NRPW	East	0.50	4.00	28
44	JD_D_020	Virginia Beach	36.761896	-76.089716	Ephemeral	NRPW	East	0.00	3.00	28

Aquatic Resource Report Table U-3.
Identified Non-JD Features

Ditch Number	Ditch ID	County	Latitude[2]	Longitude[3]	Flow Regime	Water Type[4]	Flow Direction	Ordinary High Water Mark Width (feet)	Top of Bank Width	Mapbook Page #
45	JD_D_053	Virginia Beach	36.768804	-76.074741	Ephemeral	NRPW	East	0.00	3.00	28
46	JD_D_054	Virginia Beach	36.760922	-76.094237	Ephemeral	NRPW	South	0.00	8.00	28
47	JD_D_055	Virginia Beach	36.7608405	-76.095153	Ephemeral	NRPW	South	0.00	10.00	28
48	JD_D_056	Virginia Beach	36.76024407	-76.0961207	Ephemeral	NRPW	South	0.00	10.00	28
49	JD_D_057	Virginia Beach	36.7604843	-76.097261	Ephemeral	NRPW	South	0.00	10.00	29
50	JD_D_058	Virginia Beach	36.760309	-76.098286	Ephemeral	NRPW	Southwest	0.00	8.00	29
51	JD_D_059	Virginia Beach	36.774616	-76.033707	Ephemeral	NRPW	East	0.00	3.00	19
52	JD_D_060	Virginia Beach	36.775102	-76.033348	Ephemeral	NRPW	No data	No data	No data	19
53	JD_D_061	Virginia Beach	36.775272	-76.032587	Ephemeral	NRPW	No data	No data	No data	19
54	JD_D_062	Virginia Beach	36.775636	-76.032092	Ephemeral	NRPW	No data	No data	No data	19
55	JD_D_063	Virginia Beach	36.776239	-76.031881	Ephemeral	NRPW	No data	No data	No data	19
56	JD_D_064	Virginia Beach	36.776383	-76.030951	Ephemeral	NRPW	No data	No data	No data	18, 19
57	JD_D_065	Virginia Beach	36.77715	-76.030707	Ephemeral	NRPW	East	0.00	2.00	18
58	JD_D_066	Virginia Beach	36.777605	-76.030156	Ephemeral	NRPW	No data	No data	No data	18
59	JD_D_067	Virginia Beach	36.778014	-76.0295809	Ephemeral	NRPW	No data	No data	No data	18
60	JD_D_068	Virginia Beach	36.819607	-75.9895778	Ephemeral	NRPW	South	0.00	10.00	4
61	JD_D_069	Virginia Beach	36.820325	-75.9973861	Ephemeral	NRPW	West	0.00	3.00	5, 6
62	JD_D_070	Virginia Beach	36.8195215	-75.9991619	Ephemeral	NRPW	West	0.00	2.00	6
63	JD_D_071	Virginia Beach	36.818774	-75.999985	Ephemeral	NRPW	North	0.00	2.00	6
64	JD_D_076	Virginia Beach	36.800328	-76.011108	Ephemeral	NRPW	No data	0.00	2.00	10
65	JD_D_083	Virginia Beach	36.770471	-76.044058	Ephemeral	NRPW	No data	No data	No data	21
66	RD_D_002	Virginia Beach	36.772772	-76.034824	Ephemeral	NRPW	South	0.00	6.00	19
67	RD_D_004	Virginia Beach	36.770369	-76.063314	Ephemeral	NRPW	South	0.00	8.00	23

Notes:

1 From USGS NHD (2019); see References. For identified streams without an NHD name, the identified stream was given the name, “Unnamed Tributary (UNT)”, of the first named receiving waterbody.

2 In decimal degrees.

4 RPW = Relatively Permanent Waters
NRPW = Non-Relatively Permanent Waters
TNW = Traditional Navigable Waters

5 From Cowardin et al. 1979; see References.

ATTACHMENT U-4: STREAM DATA FORMS AND PHOTO LOG

Jcros_S_001

NC DWQ Stream Identification Form Version 4.11

Date: 5/19/2021	**Project/Site:** Dominion CVOW	**Latitude:** 36.7703313
Evaluator: J. Crosby and M. Buckalew	**County:** Virginia Beach	**Longitude:** -76.043736
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 36.5	**Stream Determination (circle one)** Ephemeral Intermittent **Perennial**	**Other** *e.g. Quad Name*:

A. Geomorphology (Subtotal = 16.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	**2**	3
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	**1**	2	3
4. Particle size of stream substrate	0	**1**	2	3
5. Active/relict floodplain	0	**1**	2	3
6. Depositional bars or benches	0	1	**2**	3
7. Recent alluvial deposits	0	**1**	2	3
8. Headcuts	0	**1**	2	3
9. Grade control	0	0.5	**1**	1.5
10. Natural valley	0	**0.5**	1	1.5
11. Second or greater order channel	No = 0		**Yes = 3**	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 11)				
12. Presence of Baseflow	0	1	2	**3**
13. Iron oxidizing bacteria	0	**1**	2	3
14. Leaf litter	**1.5**	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	**1.5**
16. Organic debris lines or piles	0	0.5	**1**	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 9)				
18. Fibrous roots in streambed	**3**	2	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	0	**1**	2	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	0	0.5	**1**	1.5
23. Crayfish	0	**0.5**	1	1.5
24. Amphibians	0	**0.5**	1	1.5
25. Algae	**0**	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 **Other = 0**			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Photograph Page

Stream ID Jcros S 001 Date 05/19/2021

Photograph Number 1

Photograph Direction North

Comments:

Photograph Number 2

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction _____

Comments:

Photograph Number _____

Photograph Direction _____

Comments:

JD S 002

NC DWQ Stream Identification Form Version 4.11

Date: 5/11/2021	**Project/Site:** Dominion CVOW	**Latitude:** 36.768273
Evaluator: J. D'Augustine, L. Donston	**County:** Virginia Beach	**Longitude:** -76.084147
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15.25	**Stream Determination (circle one)** [Ephemeral] Intermittent Perennial	**Other** *e.g. Quad Name*: Princess Anne, V

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	[3]
2. Sinuosity of channel along thalweg	[0]	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	[0]	1	2	3
4. Particle size of stream substrate	0	[1]	2	3
5. Active/relict floodplain	[0]	1	2	3
6. Depositional bars or benches	[0]	1	2	3
7. Recent alluvial deposits	[0]	1	2	3
8. Headcuts	[0]	1	2	3
9. Grade control	0	[0.5]	1	1.5
10. Natural valley	0	[0.5]	1	1.5
11. Second or greater order channel	[No = 0]		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 3)				
12. Presence of Baseflow	[0]	1	2	3
13. Iron oxidizing bacteria	[0]	1	2	3
14. Leaf litter	[1.5]	1	0.5	0
15. Sediment on plants or debris	0	0.5	[1]	1.5
16. Organic debris lines or piles	0	[0.5]	1	1.5
17. Soil-based evidence of high water table?	[No = 0]		Yes = 3	

C. Biology (Subtotal = 7.25)				
18. Fibrous roots in streambed	[3]	2	1	0
19. Rooted upland plants in streambed	[3]	2	1	0
20. Macrobenthos (note diversity and abundance)	[0]	1	2	3
21. Aquatic Mollusks	[0]	1	2	3
22. Fish	[0]	0.5	1	1.5
23. Crayfish	[0]	0.5	1	1.5
24. Amphibians	[0]	0.5	1	1.5
25. Algae	0	[0.5]	1	1.5
26. Wetland plants in streambed	[FACW = 0.75;] OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Standing pools of water observed, saturated thalweg but no flow observed, heavily vegetated with Persecaria maculosa (FACW)

Sketch:

Photograph Log

Date: 5/11/21

Feature Name: JD_S_002

Photograph Direction NW

Comments:

Photograph Direction SE

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

JD S 005 – UT of North Landing River

NC DWQ Stream Identification Form Version 4.11

Date: 5/14/2021	**Project/Site:** Dominion CVOW	**Latitude:** 36.759497
Evaluator: J. D'Augustine, R. Brydon	**County:** Virginia Beach	**Longitude:** -76.099451
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 30	**Stream Determination (circle one)** Ephemeral Intermittent **[Perennial]**	**Other** *e.g. Quad Name*:

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	[3]
2. Sinuosity of channel along thalweg	0	[1]	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	[0]	1	2	3
4. Particle size of stream substrate	0	1	[2]	3
5. Active/relict floodplain	[0]	1	2	3
6. Depositional bars or benches	0	1	[2]	3
7. Recent alluvial deposits	[0]	1	2	3
8. Headcuts	[0]	1	2	3
9. Grade control	[0]	0.5	1	1.5
10. Natural valley	0	[0.5]	1	1.5
11. Second or greater order channel	No = 0		[Yes = 3]	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	[3]
13. Iron oxidizing bacteria	[0]	1	2	3
14. Leaf litter	[1.5]	1	0.5	0
15. Sediment on plants or debris	0	[0.5]	1	1.5
16. Organic debris lines or piles	0	[0.5]	1	1.5
17. Soil-based evidence of high water table?	No = 0		[Yes = 3]	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	[3]	2	1	0
19. Rooted upland plants in streambed	[3]	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	[2]	3
21. Aquatic Mollusks	[0]	1	2	3
22. Fish	0	0.5	[1]	1.5
23. Crayfish	[0]	0.5	1	1.5
24. Amphibians	0	0.5	[1]	1.5
25. Algae	[0]	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 [Other = 0]			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch: Mapped on the USGS Topo Quad as a perennial tributary of the North Landing River.

Photograph Log

Date: 5/14/21

Feature Name: JD_S_005

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

JD S 009

NC DWQ Stream Identification Form Version 4.11

Date: 5/19/2021	**Project/Site:** Dominion CVOW	**Latitude:** 36.770464
Evaluator: J. D'Augustine, K. Walls	**County:** Chesapeake	**Longitude:** -76.045993
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 20	**Stream Determination (circle one)** Ephemeral [Intermittent] Perennial	**Other** *e.g. Quad Name*:

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	[3]
2. Sinuosity of channel along thalweg	0	[1]	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	[0]	1	2	3
4. Particle size of stream substrate	0	[1]	2	3
5. Active/relict floodplain	[0]	1	2	3
6. Depositional bars or benches	0	[1]	2	3
7. Recent alluvial deposits	[0]	1	2	3
8. Headcuts	[0]	1	2	3
9. Grade control	[0]	0.5	1	1.5
10. Natural valley	0	0.5	[1]	1.5
11. Second or greater order channel	[No = 0]		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7)				
12. Presence of Baseflow	0	1	[2]	3
13. Iron oxidizing bacteria	[0]	1	2	3
14. Leaf litter	1.5	[1]	0.5	0
15. Sediment on plants or debris	[0]	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	[1]	1.5
17. Soil-based evidence of high water table?	No = 0		[Yes = 3]	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	[3]	2	1	0
19. Rooted upland plants in streambed	[3]	2	1	0
20. Macrobenthos (note diversity and abundance)	[0]	1	2	3
21. Aquatic Mollusks	[0]	1	2	3
22. Fish	[0]	0.5	1	1.5
23. Crayfish	[0]	0.5	1	1.5
24. Amphibians	[0]	0.5	1	1.5
25. Algae	[0]	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 [Other = 0]			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch: Mapped on the USGS Topo Quad as a perennial tributary of the North Landing River.

Photograph Log

Date: 5/18/21

Feature Name: JD_S_009

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

STREAM ID RD_S_001	**STREAM NAME** UT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.771812 **LONG** -76.035652	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/17/2021	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☐ Intermittent ☑ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 8.0 ft
Top of Bank Height:
LB 1.0 ft RB 2.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 6.0 ft
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: East

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	80
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Photograph Log

Date: 5/17/21

Feature Name: RD_S_001

Photograph Direction North

Comments: View facing upstream.

Photograph Direction South

Comments: View facing downstream.

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

STREAM ID RD_S_002	**STREAM NAME** UT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770368 **LONG** -76.042025	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/18/2021	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 10.0 ft
Ordinary High Water Mark (Height): _____ in
Flow Direction: North

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ___ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	40
Clay	< 0.004 mm (slick)	60

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	100
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Photograph Page

Stream ID RD_S_002 Date 05/18/2021

Photograph Number 1

Photograph Direction North

Comments: Stream looking North

Photograph Number 2

Photograph Direction South

Comments: Stream looking South

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID RD_S_003	**STREAM NAME** UT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770291 **LONG** -76.040534	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/18/2021	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 15.0 ft RB 15.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 4.0 ft
Ordinary High Water Mark (Height): _____ in
Flow Direction: Northwest

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	70
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	100
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Weak bed/bank shallow drainage feature from RD_W4.

Photograph Page

Stream ID RD_S_003 Date 05/18/2021

Photograph Number 1

Photograph Direction South

Comments: Stream looking South

Photograph Number 2

Photograph Direction North

Comments: Stream looking North

Photograph Number 3

Photograph Direction

Comments:

Photograph Number 4

Photograph Direction

Comments:

STREAM ID RD_S_004	**STREAM NAME** UT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770497 **LONG** -76.043066	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/18/2021	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 9.0 ft
Top of Bank Height:
LB 2.5 ft RB 2.5 ft
Water Depth: 6.00 in
Water Width: 5.5 ft
Ordinary High Water Mark (Width): 8.0 ft
Ordinary High Water Mark (Height): 18.0 in
Flow Direction: Northwest

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ___ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	40
Clay	< 0.004 mm (slick)	60

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
✓ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Mallard Pair and minnows within stream channel observed.

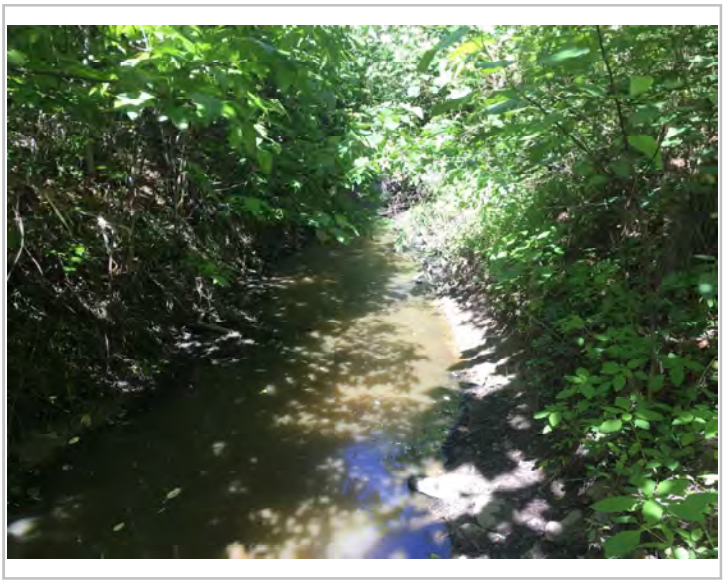
Photograph Page

Stream ID RD_S_004 Date 05/18/2021

Photograph Number 1

Photograph Direction West

Comments: Stream looking West



Photograph Number 2

Photograph Direction East

Comments: Stream looking East

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID RD_S_005	**STREAM NAME** UNT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.77006 **LONG** -76.047125	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/19/2021	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 4.0 ft
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: Southeast

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	40
Clay	< 0.004 mm (slick)	60

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	100
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
✓ ROW ___ Other:

Canopy Cover
___ Open ✓ Partly shaded
___ Shaded

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Cattails and sedges were observed within channel.

STREAM ID RD S 006	**STREAM NAME** N/A		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770108 **LONG** -76.063184	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/19/2021	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 3.0 ft
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: Northeast

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material: _____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	40
Clay	< 0.004 mm (slick)	60

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	100
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Significant leaf and pine needle litter observed within channel.

Photograph Page

Stream ID _RD_S_006 Date 05/19/2021

Photograph Number 1

Photograph Direction South

Comments: Stream looking South

Photograph Number 2

Photograph Direction NE

Comments: Stream looking Northeast

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID RD_S 007	**STREAM NAME** N/A		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770073 **LONG** -76.062926	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/19/2021	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 9.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 3.0 ft
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: North

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material: _____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	100

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	75
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Significant leaf and pine needle litter observed. Banks were observed with 45 degree slopes.

Photograph Page

Stream ID RD_S_007 Date 05/19/2021

Photograph Number 1

Photograph Direction South

Comments: Stream looking South

Photograph Number 2

Photograph Direction North

Comments: Stream looking North

Photograph Number 3

Photograph Direction

Comments:

Photograph Number 4

Photograph Direction

Comments:

STREAM ID RD-S-008	**STREAM NAME** UNT of West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770496 **LONG** -76.048759	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/20/2021	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 19.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 24.00 in
Water Width: 12.0 ft
Ordinary High Water Mark (Width): 18.0 ft
Ordinary High Water Mark (Height): 36.0 in
Flow Direction: Southwest

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run %
Pool 100 %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	100
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
✓ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ✓ Partly shaded
___ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Minnows, mallards, and an eastern painted turtle were observed within the channel.

Photograph Page

Stream ID RD_S_008 Date 05/20/2021

Photograph Number 1

Photograph Direction SW

Comments: Stream looking Southwest

Photograph Number 2

Photograph Direction North

Comments: Stream looking North

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID RD_S_009	**STREAM NAME** West Neck Creek		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.770253 **LONG** -76.055783	**STATE** Virginia	**COUNTY** Virginia Beach	
INVESTIGATORS R. Delahunty		**DATE** 05/20/2021	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 30.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 24.00 in
Water Width: 25.0 ft
Ordinary High Water Mark (Width): 30.0 ft
Ordinary High Water Mark (Height): 48.0 in
Flow Direction: Southeast

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material:_____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	100
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	20
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
___ Open ___ Partly shaded
✓ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Photograph Page

Stream ID RD_S_009 Date 05/20/2021

Photograph Number 1

Photograph Direction South

Comments: Stream looking South

Photograph Number 2

Photograph Direction NW

Comments: Stream looking Northwest

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID EF_D_002	**STREAM NAME** UNK		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.713138 **LONG** -76.168221	**STATE** Virginia	**COUNTY** Chesapeake	
INVESTIGATORS E. Foster		**DATE** 05/04/2022	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☐ Intermittent ☑ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 3.00 in
Water Width: 5.0 ft
Ordinary High Water Mark (Width): 7.0 ft
Ordinary High Water Mark (Height): 4.0 in
Flow Direction: Southeast

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ✓ Yes ___ No
Culvert Material: Concrete
Culvert Size: _____ in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	70
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ ROW ___ Other:

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

Floodplain Width
✓ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Photograph Page

Stream ID _EF_D_002 Date 05/04/2022

Photograph Number 1

Photograph Direction East

Comments:

Photograph Number 2

Photograph Direction West

Comments:

Photograph Number 3

Photograph Direction West

Comments: Culvert locate northwest of study area

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID EF_D_004	**STREAM NAME** UNK		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.712341 **LONG** -76.16816	**STATE** Pennsylvania	**COUNTY** Chesapeake	
INVESTIGATORS E. Foster		**DATE** 05/04/2022	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☐ Intermittent ☑ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 1.5 ft RB 1.5 ft
Water Depth: 4.00 in
Water Width: 2.0 ft
Ordinary High Water Mark (Width): 2.5 ft
Ordinary High Water Mark (Height): 7.0 in
Flow Direction: North

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material: _____
Culvert Size: _____in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	70
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ ROW ___ Other:

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Flows into EF_D_002

Photograph Page

Stream ID EF_D_004 Date 05/04/2022

Photograph Number 1

Photograph Direction North

Comments:

Photograph Number 2

Photograph Direction South

Comments:

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

STREAM ID EF_D_013	**STREAM NAME** UNT to Pocaty River		
CLIENT Dominion	**PROJECT NAME** Dominion CVOW		
LAT 36.700968 **LONG** -76.169879	**STATE** Virginia	**COUNTY** Chesapeake	
INVESTIGATORS E. Foster		**DATE** 05/04/2022	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☐ Intermittent ☑ Ephemeral ☐		

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 15.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 12.00 in
Water Width: 8.0 ft
Ordinary High Water Mark (Width): 8.0 ft
Ordinary High Water Mark (Height): 12.0 in
Flow Direction: Southeast

Sinuosity ✓ Low ___ Medium ___ High

Gradient ✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Within Roadside Ditch
___ Yes ✓ No

Culvert Present ___ Yes ✓ No
Culvert Material: _____
Culvert Size: _____ in

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types (Only enter if water present)
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	70
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ ROW ___ Other:

Canopy Cover
___ Open ___ Partly shaded
___ Shaded

Floodplain Width
✓ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <15ft

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

Photograph Page

Stream ID EF-D-0I3 Date 05/04/2022

Photograph Number 1

Photograph Direction NW

Comments:

Photograph Number 2

Photograph Direction SE

Comments:

Photograph Number 3

Photograph Direction _____

Comments:

Photograph Number 4

Photograph Direction _____

Comments:

ATTACHMENT U-5: WETLAND DETERMINATION DATA FORMS AND PHOTO LOG

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Chesapeake Sampling Date: 4/28/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_001_PEM

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.720744 Long: -76.166528 Datum: WGS84

Soil Map Unit Name: Dorovan-Belhaven complex, 0 to 1 percent slopes, frequently flooded 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 x, Soil x, 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:

Disturbed existing powerline easement. Becomes inacessible to the NE due to inundated conditions.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes x No _____ Depth (inches): 0-4

Water Table Present? Yes x No _____ Depth (inches): 0

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:

Inundated portion of existing powerline easement.

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

Sampling Point: EF_W_001_PEM

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Typha latifolia, Broad-Leaf Cat-Tail	75	Yes	OBL
2. Saururus cernuus, Lizard's-Tail	10	No	OBL
3. Carex vulpinoidea, Common Fox Sedge	5	No	FACW
4. Juncus effusus, Lamp Rush	5	No	OBL
5. Sagittaria latifolia, Duck-Potato	5	No	OBL
6. Solidago sp.	5	No	ND
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft)			
1. Rubus pensilvanicus, Pennsylvania Blackberry	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		135 (B)

Prevalence Index = B/A = 1.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_001_PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/1	100%					Silty clay loam	No H2S odor, top layer of muck
6-12	7.5yr 4/4	100%					Loamy sand	Metallic odor
12-18	7.5yr 4/4	100%					Loamy sand	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- x 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)
- x 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:

Disturbed soils from heavy equipment access to powerline easement.

Photograph Log

Date: 4/28/21

Feature Name: EF_W_001_PEM

Photograph Number _____

Photograph Direction South

Comments: View of PEM wetland to the South.

Photograph Number _____

Photograph Direction North

Comments: View of PEM wetland to the North.

Photograph Number _____

Photograph Direction East

Comments: View of PEM wetland to the East.

Photograph Number _____

Photograph Direction West

Comments: View of PEM wetland to the West.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Chesapeake Sampling Date: 4/28/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_001_PFO

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range:

Landform (hillslope, terrace, etc.): Flatwoods Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.720143 Long: -76.166504 Datum: WGS84

Soil Map Unit Name: Munden loamy fine sand, 2 to 8 percent slopes NWI classification: PFO1C

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:

Forested wetland located on E side of powerline easement, and continuing outside of the survey area.

Observed Classifications:

Cowardin: PFO

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)
- ___ Marl Deposits (B15) **(LRR U)**
- x Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes x	No _____	Depth (inches): 0-4
Water Table Present?	Yes x	No _____	Depth (inches): 0
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:

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

Sampling Point: EF_W_001_PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	20	Yes	FAC
2. Fraxinus pennsylvanica, Green Ash	15	Yes	FACW
3. Ulmus americana, American Elm	10	No	FAC
4. Liquidambar styraciflua, Sweet-Gum	10	No	FAC
5. Taxodium distichum, Southern Bald-Cypress	5	No	OBL
6.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Sapling Stratum (Plot size: 30 ft)			
1. Ulmus americana, American Elm	5	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	5	Yes	FAC
3. Acer rubrum, Red Maple	5	Yes	FAC
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Glyceria septentrionalis, Floating Manna Grass	25	Yes	OBL
2. Osmundastrum cinnamomeum, Cinnamon Fern	5	No	FACW
3. Arundinaria gigantea, Giant Cane	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	25	x 2 =	50
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		245 (B)

Prevalence Index = B/A = 2.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_001_PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 2/1	100%					Muck	
6-18	10yr 2/1	100%					Loamy sand	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- x 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 4/28/21

Feature Name: EF_W_001_PFO

Photograph Number _____

Photograph Direction East

Comments: View of PFO wetland to the East.

Photograph Number _____

Photograph Direction North

Comments: View of PFO wetland to the North.

Photograph Number _____

Photograph Direction West

Comments: View of PFO wetland to the West.

Photograph Number _____

Photograph Direction South

Comments: View of PFO wetland to the South.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 4/28/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_001_UP

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.720057 Long: -76.166515 Datum: WGS84

Soil Map Unit Name: Munden loamy fine sand, 2 to 8 percent slopes NWI classification: PFO1C

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:

Observed Classifications:

Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_W_001_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liriodendron tulipifera, Tuliptree	30	Yes	FACU
2. Acer rubrum, Red Maple	25	Yes	FAC
3. Liquidambar styraciflua, Sweet-Gum	10	No	FAC
4.			
5.			
6.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	10	Yes	FAC
2. Liriodendron tulipifera, Tuliptree	10	Yes	FACU
3. Oxydendrum arboreum, Sourwood	5	Yes	FACU
4.			
5.			
6.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Lonicera japonica, Japanese Honeysuckle	15	Yes	FACU
2. Stellaria media, Common Chickweed	10	Yes	FACU
3. Parthenocissus quinquefolia, Virginia-Creeper	10	Yes	FACU
4. Podophyllum peltatum, May-Apple	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	130 (A)		475 (B)

Prevalence Index = B/A = 3.65

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: EF_W_001_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5y 2.5/1	100%					Silty loam	
6-12	10yr 4/3	80%	10yr 8/3	20%	C	PL	Sandy clay loam	
12-18	7.5yr 6/2	100%					Sand	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 4/28/21

Feature Name: EF_W_001_UP

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction East

Comments:

Photograph Number _____

Photograph Direction North

Comments:

Photograph Number _____

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 4/28/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_002_PEM

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.718325 Long: -76.16744 Datum: WGS84

Soil Map Unit Name: Tomotley-Bertie complex, 0 to 2 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 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:

Recently disturbed by heavy equipment in power line easement. Torn up soil and recently mowed vegetation.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- x Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_002_PEM

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Solidago sp.	15	Yes	ND
2. Juncus effusus, Lamp Rush	15	Yes	OBL
3. Carex lurida, Shallow Sedge	15	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 66.7% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

Very recently disturbed vegetation, much is covered my recently disturbed soil.

SOIL

Sampling Point: EF_W_002_PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5yr 4/3	75%	7.5yr 5/6	25%	C	PL	Clay loam	
6-12	10yr 5/2	75%	7.5yr 4/6	25%	C	PL	Clay loam	
12-18	10yr 4/2	65%	7.5 yr 5/8	35%	C	PL	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)
- x Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)
- x 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:

Severely disturbed soils from heavy equipment

Photograph Log

Date: 4/28/21

Feature Name: EF_W_002_PEM

Photograph Number _____

Photograph Direction North

Comments: View of PEM wetland to the North.

Photograph Number _____

Photograph Direction South

Comments: View of PEM wetland to the South.

Photograph Number _____

Photograph Direction West

Comments: View of PEM wetland to the West.

Photograph Number _____

Photograph Direction East

Comments: View of PEM wetland to the East.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Chesapeake Sampling Date: 4/28/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_002_UP

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.718196 Long: -76.167443 Datum: WGS84

Soil Map Unit Name: Tomotley-Bertie complex, 0 to 2 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:
Fallow agriculture field

Observed Classifications:
Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_W_002_UP

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Trifolium pratense, Red Clover	15	Yes	FACU
2. Ranunculus sardous, Hairy Buttercup	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	30 (A)		105 (B)

Prevalence Index = B/A = 3.50

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

Agriculture field,currently fallow

SOIL

Sampling Point: EF_W_002_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5y 4/4	100%					Silty loam	
12-18	2.5y 5/4	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Agriculture field,currently fallow

Photograph Log

Date: 4/28/21

Feature Name: EF_W_002_UP

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction North

Comments:

Photograph Number _____

Photograph Direction West

Comments:

Photograph Number _____

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Chesapeake Sampling Date: 5/29/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_003

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.713501 Long: -76.168335 Datum: WGS84

Soil Map Unit Name: Acredale silt loam, 0 to 1 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 x, Soil x, 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:

Disturbed fallow agricultural field. Drained by ditches, some small emergent areas.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_003

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Juncus articulatus, Joint-Leaf Rush	15	Yes	OBL
2. Juncus effusus, Lamp Rush	15	Yes	OBL
3. Ranunculus sardous, Hairy Buttercup	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	40 (A)		60 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_003

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/1	85%	10yr 5/8	15%	C	PL	Clay loam	no odor
6-12	7.5yr 4/1	85%	2.5yr 4/6	15%	C	PL	Clay loam	
12-18	10yr 3/2	80%	2.5yr 4/6	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
x Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/29/21

Feature Name: EF_W_003

Photograph Number _____

Photograph Direction East

Comments: View of PEM wetland to the East.

Photograph Number _____

Photograph Direction North

Comments: View of PEM wetland to the North.

Photograph Number _____

Photograph Direction South

Comments: View of PEM wetland to the South.

Photograph Number _____

Photograph Direction West

Comments: View of PEM wetland to the West.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 4/29/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_003_UP

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.711832 Long: -76.168321 Datum: WGS84

Soil Map Unit Name: Tomotley-Bertie complex, 0 to 2 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 x, Soil x, 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 _____ No x	**Is the Sampled Area within a Wetland?** Yes _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

No hydrologic indicators. Fallow field, effectively drained by ditches

Observed Classifications:

Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_W_003_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Ranunculus sardous, Hairy Buttercup	40	Yes	FAC
2. Lolium perenne, Perennial Rye Grass	35	Yes	FACU
3. Trifolium repens, White Clover	15	No	FACU
4. Trifolium dubium, Suckling Clover	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 50.0% (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	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	100 (A)		360 (B)

Prevalence Index = B/A = 3.60

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: EF_W_003_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	97%	7.5YR 4/6	3%	C	PL	Sandy clay loam	
6-12	10yr 5/1	70%	7.5yr 5/8	30%	C	M	Loamy clay	
12-18	10yr 4/1	60%	7.5yr 5/8	40%	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
x Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Relic hydric soil coloring likely from prior to drained conditions. If ditches were abandoned this area would potentially develop wetland conditions.

Photograph Log

Date: 4/29/21

Feature Name: EF_W_003_UP

Photograph Number _____

Photograph Direction West

Comments:

Photograph Number _____

Photograph Direction East

Comments:

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/4/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_004

Investigator(s): Emily Foster, Kristen Walls, Chelsea Bajek Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.700803 Long: -76.169978 Datum: WGS84

Soil Map Unit Name: Tomotley-Nimmo complex, 0 to 1 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 x, Soil x, 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:

Fallow agricultural field drained by a series of ditches. Some emergent wetland areas apparent, adjacent to or in vicinity of ditches with surface connection.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_004

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Juncus effusus, Lamp Rush	75	Yes	OBL
2. Ranunculus sardous, Hairy Buttercup	10	No	FAC
3. Juncus articulatus, Joint-Leaf Rush	10	No	OBL
4. Carex lurida, Shallow Sedge	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: EF_W_004

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/2	100%					Loamy sand	
6-18	10yr 4/1	95%	10yr 5/6	5%	C	PL	Loamy sand	

[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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
x Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Soil is disturbed and compacted, fallow agricultural field. Some shallow surface connection to adjacent ditch.

Photograph Log

Date: 5/4/21

Feature Name: EF_W_004

Photograph Number _____

Photograph Direction East

Comments: View of a PEM wetland to the East.

Photograph Number _____

Photograph Direction South

Comments: View of a PEM wetland to the South.

Photograph Number _____

Photograph Direction West

Comments: View of a PEM wetland to the West.

Photograph Number _____

Photograph Direction North

Comments: View of a PEM wetland to the North.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/4/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_004-005-006 UP

Investigator(s): Emily Foster, Kristen Walls, Chelsea Bajek Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.700915 Long: -76.169961 Datum: WGS84

Soil Map Unit Name: Tomotley-Nimmo complex, 0 to 1 percent slopes NWI classification: R4SBCx

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

Are Vegetation x, Soil x, 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 _____	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:

Fallow agricultural field drained by a series of ditches.

Observed Classifications:

Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_W_004-005-006UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Poa pratensis, Kentucky Blue Grass	30	Yes	FACU
2. Lolium perenne, Perennial Rye Grass	15	Yes	FACU
3. Juncus articulatus, Joint-Leaf Rush	10	No	OBL
4. Ranunculus sardous, Hairy Buttercup	10	No	FAC
5. Juncus effusus, Lamp Rush	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	70 (A)		225 (B)

Prevalence Index = B/A = 3.21

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: EF_W_004-005-006 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10yr 3/3	100%					Loamy sand	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/4/2021

Feature Name: EF_W_004-005-006 UP

Photograph Number _____

Photograph Direction West

Comments:

Photograph Number _____

Photograph Direction East

Comments:

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/4/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_005

Investigator(s): Emily Foster, Kristen Walls, Chelsea Bajek Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.701229 Long: -76.169645 Datum: WGS84

Soil Map Unit Name: Tomotley-Nimmo complex, 0 to 1 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 x, Soil x, 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:

Fallow agriculturak field with some emergent wetland areas adjacent to ditches.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_005

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Juncus effusus, Lamp Rush	75	Yes	OBL
2. Ranunculus sardous, Hairy Buttercup	10	No	FAC
3. Juncus articulatus, Joint-Leaf Rush	10	No	OBL
4. Carex lurida, Shallow Sedge	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: EF_W_005

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/2	100%					Loamy sand	
6-18	10yr 4/1	95%	10yr 5/6	5%	C	PL	Loamy sand	

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Soil is disturbed and compacted, fallow agricultural field. Shallow surface connection to adjacent ditch.

Photograph Log

Date: 5/4/21

Feature Name: EF_W_005

Photograph Number _____

Photograph Direction East

Comments: View of a PEM wetland to the East.

Photograph Number _____

Photograph Direction South

Comments: View of a PEM wetland to the South.

Photograph Number _____

Photograph Direction North

Comments: View of a PEM wetland to the North.

Photograph Number _____

Photograph Direction West

Comments: View of a PEM wetland to the West.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/4/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_006

Investigator(s): Emily Foster, Kristen Walls, Chelsea Bajek Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.701513 Long: -76.170192 Datum: WGS84

Soil Map Unit Name: Tomotley-Nimmo complex, 0 to 1 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 x, Soil x, 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:

Agricultural field being drained by a series of ditches. Emergent wetlands adjacent to ditches with shallow surface connection.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_006

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Juncus effusus, Lamp Rush	55	Yes	OBL
2. Typha latifolia, Broad-Leaf Cat-Tail	10	No	OBL
3. Ranunculus sardous, Hairy Buttercup	10	No	FAC
4. Juncus articulatus, Joint-Leaf Rush	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		105 (B)

Prevalence Index = B/A = 1.24

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: EF_W_006

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/2	100%					Loamy sand	
6-18	10yr 4/1	95%	10yr 5/6	5%	C	PL	Loamy sand	

[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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
x Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Soil is disturbed and compacted, fallow agricultural field.

Photograph Log

Date: 5/4/21

Feature Name: EF_W_006

Photograph Number _____

Photograph Direction North

Comments: View of a PEM wetland to the North.

Photograph Number _____

Photograph Direction South

Comments: View of a PEM wetland to the South.

Photograph Number _____

Photograph Direction East

Comments: View of a PEM wetland to the East.

Photograph Number _____

Photograph Direction West

Comments: View of a PEM wetland to the West.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_008_PEM

Investigator(s): Emily Foster, Kristen Walls Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.74263741 Long: 76.14043379 Datum: WGS84

Soil Map Unit Name: 2: Acredale-Chapanoke complex, 0 to 1 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 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:

Disturbed emergent wetland in existing powerline easement.

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: EF_W_008_PEM

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Typha latifolia, Broad-Leaf Cat-Tail	25	Yes	OBL
2. Carex lurida, Shallow Sedge	25	Yes	OBL
3. Juncus effusus, Lamp Rush	15	No	OBL
4. Arundinaria tecta, Switch Cane	15	No	FACW
5. Carex lonchocarpa, Southern Long Sedge	5	No	OBL
6. Solidago sp.	5	No	
7. Acer rubrum, Red Maple	5	No	FAC
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	15	x 2 =	30
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		115 (B)

Prevalence Index = B/A = 1.28

Hydrophytic Vegetation Indicators:

x 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_008_PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/2	95%	10yr 4/6	5%	C	PL	Clay loam	
6-18	10yr 5/2	90%	10yr 4/6	10%	C	PL	Silty 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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
x Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/3/21

Feature Name: EF_W_008 PEM

Photograph Number _____

Photograph Direction West

Comments: None.

Photograph Number _____

Photograph Direction East

Comments: None.

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_008_PFO

Investigator(s): Emily Foster, Kristen Walls Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.74136876 Long: 76.14361945 Datum: WGS84

Soil Map Unit Name: 2: Acredale-Chapanoke complex, 0 to 1 percent slopes NWI classification: PFO1E

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:

Large PFO complex associated with Gum Swamp. To NE and SW of existing powerline easement. Upland point is JD_W_004 .

Observed Classifications:

Cowardin: PFO

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes x	No _____	Depth (inches): 0-1
Water Table Present?	Yes x	No _____	Depth (inches): 0
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:

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

Sampling Point: EF_W_008_PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	35	Yes	FAC
2. Salix nigra, Black Willow	35	Yes	OBL
3.			
4.			
5.			
6.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea, Giant Cane	15	Yes	FACW
2. Saururus cernuus, Lizard's-Tail	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	15	x 2 =	30
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		285 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_008_PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 2/1	100%					Muck	
6-18	10yr 4/1	100%					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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
x Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: EF_W_008_PFO

Photograph Direction West

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: CVOW Dominion City/County: Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_009

Investigator(s): Emily Foster, Kristen Walls Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.74609532 Long: 76.13322054 Datum: WGS84

Soil Map Unit Name: 2: Acredale-Chapanoke complex, 0 to 1 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 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:

Disturbed wetland in existing powerline easement. ssoc o s JD_ _006_

Observed Classifications:

Cowardin: PEM

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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): 13

Wetland Hydrology Present? Yes x No _____

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

Remarks:

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

Sampling Point: EF W 009

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	30	Yes	FACW
2. Eleocharis palustris, Common Spike-Rush	30	Yes	OBL
3. Juncus effusus, Lamp Rush	20	Yes	OBL
4. Solidago sp.	5	No	
5. Osmunda spectabilis, Royal Fern	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		115 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

x 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_009

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 4/2	95%	10yr 3/6	5%	C	PL	Clay	
3-6	10yr 5/2	95%	7.5yr 5/6	5%	C	PL	Loamy Clay	
6-18	10yr 5/2	70%	7.5yr 5/6	30%	C	PL	Loamy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: EF_W_009

Photograph Direction SE

Comments:

Photograph Direction SW

Comments:

Photograph Direction NE

Comments:

Photograph Direction NW

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/14/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_013

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 3-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: _____ Long: _____ Datum: WGS84

Soil Map Unit Name: _____ NWI classification: _____

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

Are Vegetation __x__, Soil __x__, 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:
Wet meadow in powerline easement

Observed Classifications:
Cowardin: PEM

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)
- __x__ 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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- __x__ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- __x__ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- __x__ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No __x__	Depth (inches): _____
Water Table Present?	Yes _____	No __x__	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes __x__	No _____	Depth (inches): 8

Wetland Hydrology Present? Yes __x__ No _____

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

Remarks:

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

Sampling Point: EF_W_013

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Solidago gigantea, Late Goldenrod	40	Yes	FACW
2. Cirsium vulgare, Bull Thistle	30	Yes	FACU
3. Juncus effusus, Lamp Rush	20	No	OBL
4. Eleocharis obtusa, Blunt Spike-Rush	5	No	OBL
5. Scirpus atrovirens, Dark-Green Bulrush	5	No	OBL
6. Carex lurida, Shallow Sedge	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	105 (A)		235 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_013

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2	100%					Silty clay loam	
6-10	10yr 4/2	70%	7.5yr 4/6	30%			Silty clay loam	
10-16	10yr 4/2	60%	7.5yr 5/6	40%			Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/14/21

Feature Name: EF_W_013

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/14/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_W_013_UP

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 3-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770597 Long: -76.064658 Datum: WGS84

Soil Map Unit Name: Tomotely Loam NWI classification: _____

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 _____ No x
Hydric Soil Present?	Yes _____	No x	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:
Upland forest adjacent to powerline easement.

Observed Classifications:
Cowardin: upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_W_013_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	35	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	25	Yes	FAC
3. Quercus rubra, Northern Red Oak	20	Yes	FACU
4. Pinus taeda, Loblolly Pine	15	No	FAC
5.			
6.			
	95	= Total Cover	
50% of total cover: 47.5	20% of total cover: 19		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	15	Yes	FAC
2. Morella cerifera, Southern Bayberry	6	Yes	FAC
3.			
4.			
5.			
6.			
	21	= Total Cover	
50% of total cover: 10.5	20% of total cover: 4.2		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Echinochloa crus-galli, Large Barnyard Grass	5	Yes	FACW
2. Carex sp	5	Yes	
3. Pinus taeda, Loblolly Pine	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	5	Yes	FAC
2.			
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: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	106	x 3 =	318
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	131 (A)		408 (B)

Prevalence Index = B/A = 3.11

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_W_013_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5y 5/8	100%					Sandy loam	
6-12	10yr 4/1	80%	10yr 5/6	20%			Sandy loam	
12-16	10yr 4/1	75%	10yr 5/3	25%			Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Very dry crumbly soils.

Photograph Log

Date: 5/14/21

Feature Name: EF_W_013_UP

Photograph Direction West

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: Jcros_W_010

Investigator(s): J. Crosby, M. Buckalew Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770092 Long: -76.060636 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: PFO

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: Jcros_W_010

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	40	Yes	FAC
2. Acer rubrum, Red Maple	25	Yes	FAC
3. Liquidambar styraciflua, Sweet-Gum	15	No	FAC
4.			
5.			
6.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Woodwardia areolata, Netted Chain Fern	30	Yes	OBL
2. Osmunda spectabilis, Royal Fern	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		280 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: Jcros_W_010

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	90%	2.5R 5/4	10%	C	PL	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/19/21

Feature Name: Jcros_W_010

Photograph Direction East

Comments:

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: Jcros_W_010_UP

Investigator(s): J. Crosby, M. Buckalew Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770039 Long: -76.0608378 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:

No hydrology indicators observed.

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

Sampling Point: Jcros_W_010_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	40	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	20	Yes	FAC
3. Acer rubrum, Red Maple	10	No	FAC
4.			
5.			
6.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft)			
1. Toxicodendron radicans, Eastern Poison Ivy	10	Yes	FAC
2. Campsis radicans, Trumpet-Creeper	10	Yes	FAC
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: Jcros_W_010_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/19/21

Feature Name: Jcros_W_010_UP

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake/Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_004

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.742982 Long: -76.139637 Datum: WGS84

Soil Map Unit Name: 2 - Acredale-Chapanoke complex, 0 to 1 percent 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 _____ No x

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:

Data point taken within existing overhead utility easement.

Observed Classifications:

Cowardin: _____

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 8
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:

Surface water (approximately 3 inches) observed adjacent to data point location. The water table was measured at approximately 8 inches during data collection but it can be assumed that due to location of adjacent surface water, water table is more likely within 1-2 inches of the soil surface and water infiltration was slow due to high clay content.

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

Sampling Point: JD_W_004

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Pinus taeda, Loblolly Pine	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft)			
1. Eleocharis palustris, Common Spike-Rush	25	Yes	OBL
2. Arundinaria tecta, Switch Cane	20	Yes	FACW
3. Andropogon virginicus, Broom-Sedge	20	Yes	FAC
4. Andropogon glomeratus, Bushy Bluestem	20	Yes	FACW
5. Pinus taeda, Loblolly Pine	5	No	FAC
6. Juncus effusus, Lamp Rush	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_004

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/1	95%	7.5YR 6/6	5%	C	M	Clay loam	
5-12	10YR 5/1	95%	10YR 5/8	5%	C	PL	Clay loam	
12-20	2.5Y 7/1	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: JD_W_004

Photograph Direction West

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake/Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W04_UP

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.742891 Long: -76.139607 Datum: WGS84

Soil Map Unit Name: 2 - Acredale-Chapanoke complex, 0 to 1 percent slopes NWI classification: N/A

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 _____ No x

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 _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Data point taken along forested edge of existing utility easement. Soil meets the depleted matrix hydric soil indicator, however only one secondary hydrology indicator was identified, FAC-neutral test, and therefore does not characterize this area as a wetland.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_004 UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	80	Yes	FACW
2. Pinus taeda, Loblolly Pine	5	No	FAC
3. Andropogon virginicus, Broom-Sedge	5	No	FAC
4. Andropogon glomeratus, Bushy Bluestem	5	No	FACW
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: 30 ft)			
1. Vitis rotundifolia, Muscadine	15	Yes	FAC
2. Smilax rotundifolia, Horsebrier	5	Yes	FAC
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: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		260 (B)

Prevalence Index = B/A = 2.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

Forested area consisted of Pinus taeda, Acer rubrum, and Fagus grandifolia.

SOIL

Sampling Point: JD_W_004_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100%					Loam	
3-7	10YR 3/2	100%					Loam	
7-20	10YR 6/1	98%	10YR 6/6	2%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: JD_W_004_UP

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake/Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W 005

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.744654 Long: -76.136382 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam, 0 to 1 percent 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 _____ No x

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:

Data point taken within existing overhead utility easement.

Observed Classifications:

Cowardin: _____

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)
- x Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: JD_W_005

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Eleocharis palustris, Common Spike-Rush	40	Yes	OBL
2. Arundinaria gigantea, Giant Cane	30	Yes	FACW
3. Juncus effusus, Lamp Rush	15	No	OBL
4. Decodon verticillatus, Swamp-Loosestrife	5	No	OBL
5. Carex lurida, Shallow Sedge	5	No	OBL
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: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		125 (B)

Prevalence Index = B/A = 1.32

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: JD_W_005

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/2	100%					Clay loam	
2-17	2.5Y 4/1	98%	2.5Y 4/4	2%	C	M	Clay loam	
17-20	10YR 5/1	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: JD_W_005

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake/Chesapeake Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W05_UP

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.744621 Long: -76.136683 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam, 0 to 1 percent slopes NWI classification: N/A

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 _____ No x

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:

Data point location taken at forested edge of existing overhead utility easement.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_005 UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	40	Yes	FACW
2. Anthoxanthum odoratum, Large Sweet Vernal Grass	20	Yes	FACU
3. Solidago altissima, Tall Goldenrod	10	No	FACU
4. Microstegium vimineum, Japanese Stilt Grass	10	No	FAC
5. Eupatorium capillifolium, Dog-Fennel	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft)			
1. Parthenocissus quinquefolia, Virginia-Creeper	15	Yes	FACU
2. Smilax rotundifolia, Horsebrier	10	Yes	FAC
3.			
4.			
5.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	20	x 3 =	60
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	110 (A)		340 (B)

Prevalence Index = B/A = 3.09

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: JD_W_005 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/2	100%					Clay loam	
14-20	10YR 4/3	95%	10YR 5/6	5%	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Soil contains redoximorphic features but the matrix is not depleted enough to meet any hydric soil indicators.

Photograph Log

Date: 5/5/21

Feature Name: JD_W_005_UP

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_006

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.74715 Long: -76.132314 Datum: WGS84

Soil Map Unit Name: 21 - Nawney silt loam NWI classification: PFO

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:

Observed Classifications:
Cowardin: PFO

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes x	No _____	Depth (inches): 1
Water Table Present?	Yes x	No _____	Depth (inches): 0
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:

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

Sampling Point: JD_W_006

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Taxodium ascendens, Pond-Cypress	30	Yes	OBL
2. Salix nigra, Black Willow	20	Yes	OBL
3. Catalpa speciosa, Northern Catalpa	5	No	FACU
4.			
5.			
6.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	30	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	30	Yes	FAC
3. Taxodium ascendens, Pond-Cypress	10	No	OBL
4. Salix nigra, Black Willow	10	No	OBL
5. Ulmus americana, American Elm	5	No	FAC
6.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Shrub Stratum (Plot size: 30 ft)			
1. Taxodium ascendens, Pond-Cypress	15	Yes	OBL
2. Acer rubrum, Red Maple	5	No	FAC
3. Liquidambar styraciflua, Sweet-Gum	5	No	FAC
4. Catalpa speciosa, Northern Catalpa	5	No	FACU
5.			
6.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 30 ft)			
1. Onoclea sensibilis, Sensitive Fern	10	Yes	FACW
2. Carex tribuloides, Blunt Broom Sedge	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	15	x 2 =	30
FAC species	85	x 3 =	255
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	195 (A)		410 (B)

Prevalence Index = B/A = 2.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_006

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/1	100%					Clay loam	
6-20	10YR 5/1	60%	10YR 5/6	10%	C	M	Clay loam	
	2.5Y 4/2	20%						

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: JD_W_006

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/5/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W06_UP

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.747147 Long: -76.132373 Datum: WGS84

Soil Map Unit Name: 21 - Nawney silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_006 UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii, Swamp Chestnut Oak	30	Yes	FACW
2. Liquidambar styraciflua, Sweet-Gum	25	Yes	FAC
3. Quercus rubra, Northern Red Oak	15	No	FACU
4. Quercus falcata, Southern Red Oak	15	No	FACU
5.			
6.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Sapling Stratum (Plot size: 30 ft)			
1. Quercus falcata, Southern Red Oak	10	Yes	FACU
2. Ulmus americana, American Elm	10	Yes	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft)			
1. Carya glabra, Pignut Hickory	5	Yes	FACU
2. Ulmus americana, American Elm	5	Yes	FAC
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Andropogon virginicus, Broom-Sedge	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30 ft)			
1. Parthenocissus quinquefolia, Virginia-Creeper	30	Yes	FACU
2. Smilax rotundifolia, Horsebrier	10	No	FAC
3. Vitis rotundifolia, Muscadine	10	No	FAC
4. Toxicodendron radicans, Eastern Poison Ivy	10	No	FAC
5.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species	x 2 =
FAC species 75	x 3 = 225
FACU species 75	x 4 = 300
UPL species 0	x 5 = 0
Column Totals: (A)	(B)

Prevalence Index = B/A = 0.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_006 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/3	100%					Loam	
7-20	10YR 5/4	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/5/21

Feature Name: JD_W_006 UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/17/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_015

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.818569 Long: -75.98849 Datum: WGS84

Soil Map Unit Name: 32 - Rappahannock mucky peat, strongly saline NWI classification: E2EM3

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:

Observed Classifications:

Cowardin: _____

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

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

Wetland Hydrology Present? Yes x No _____

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

Remarks:

Small fiddler crabs observed along wetland area. Open water observed within 20 feet of data point.

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

Sampling Point: JD_W_015

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Morella cerifera, Southern Bayberry	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft)			
1. Phragmites australis, Common Reed	80	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		205 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_015

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	100%					Clay loam	
12-20	GLY1 4/1	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- x Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/17/21

Feature Name: JD_W_015

Photograph Direction NE

Comments:

Photograph Direction NW

Comments:

Photograph Direction SE

Comments:

Photograph Direction SW

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/17/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_015_UP

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.818721 Long: -75.988446 Datum: WGS84

Soil Map Unit Name: 43 - Yeopim silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_015_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	40	Yes	FAC
2. Acer rubrum, Red Maple	20	Yes	FAC
3. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
4.			
5.			
6.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	10	Yes	FAC
2. Carya glabra, Pignut Hickory	10	Yes	FACU
3. Carpinus caroliniana, American Hornbeam	5	Yes	FAC
4.			
5.			
6.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
2. Quercus falcata, Southern Red Oak	5	Yes	FACU
3. Vaccinium angustifolium, Late Lowbush Blueberry	5	Yes	FACU
4.			
5.			
6.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft)			
1. Vitis rotundifolia, Muscadine	5	Yes	FAC
2. Smilax rotundifolia, Horsebrier	5	Yes	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 72.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	135 (A)		425 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_015_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100%					Loam	
4-20	10YR 5/4	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/17/21

Feature Name: JD_W_015_UP

Photograph Direction NE

Comments:

Photograph Direction SW

Comments:

Photograph Direction West

Comments:

Photograph Direction SE

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/17/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_016

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.819893 Long: -75.99009 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: PFO

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: JD_W_016

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba, Northern White Oak	30	Yes	FACU
2. Acer rubrum, Red Maple	15	Yes	FAC
3. Nyssa sylvatica, Black Tupelo	10	No	FAC
4.			
5.			
6.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	30	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
3. Nyssa sylvatica, Black Tupelo	10	No	FAC
4.			
5.			
6.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Shrub Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
2. Pinus taeda, Loblolly Pine	5	Yes	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 30 ft)			
1. Zephyranthes atamasca, Atamasco-Lily	30	Yes	FACW
2. Galium tinctorium, Stiff Marsh Bedstraw	20	Yes	FACW
3. Dichanthelium clandestinum, Deer-Tongue Rosette G	20	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	100	x 3 =	300
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	200 (A)		560 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_016

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	100%					Clay loam	
2-20	10YR 6/1	80%	10YR 5/6	20%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- x Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/17/21

Feature Name: JD_W_016

Photograph Number _____

Photograph Direction SE

Comments:

Photograph Number _____

Photograph Direction SW

Comments:

Photograph Number _____

Photograph Direction West

Comments:

Photograph Number _____

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/17/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_016_UP

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.819673 Long: -75.990034 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_016_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba, Northern White Oak	30	Yes	FACU
2. Pinus taeda, Loblolly Pine	25	Yes	FAC
3. Acer rubrum, Red Maple	15	Yes	FAC
4. Liquidambar styraciflua, Sweet-Gum	5	No	FAC
5.			
6.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	5	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	5	Yes	FAC
3. Nyssa sylvatica, Black Tupelo	5	Yes	FAC
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Shrub Stratum (Plot size: 30 ft)			
1. Nyssa sylvatica, Black Tupelo	5	Yes	FAC
2. Acer rubrum, Red Maple	5	Yes	FAC
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Dichanthelium clandestinum, Deer-Tongue Rosette G	15	Yes	FACW
2. Acer rubrum, Red Maple	10	Yes	FAC
3. Liquidambar styraciflua, Sweet-Gum	10	Yes	FAC
4. Quercus alba, Northern White Oak	5	No	FACU
5. Pinus taeda, Loblolly Pine	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 ft)			
1. Parthenocissus quinquefolia, Virginia-Creeper	5	Yes	FACU
2. Smilax rotundifolia, Horsebrier	5	Yes	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 11 (A)

Total Number of Dominant Species Across All Strata: 13 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 84.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	100	x 3 =	300
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	155 (A)		490 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_016_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100%					Loam	
3-7	10YR 5/3	100%					Loam	
7-20	10YR 5/4	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/17/21

Feature Name: JD_W_016_UP

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_019

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.817835 Long: -75.986478 Datum: WGS84

Soil Map Unit Name: 32 - Rappahannock mucky peat, strongly saline NWI classification: E2EM

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:

Observed Classifications:

Cowardin: _____

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- x Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- x Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x 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)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 2
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:

Atlantic ribbed mussel observed within the intertidal wetland.

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

Sampling Point: JD_W_019

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Phragmites australis, Common Reed	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	30 (A)		60 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- x 1 - Rapid Test for Hydrophytic Vegetation
- x 2 - Dominance Test is >50%
- x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_019

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/3	100%					Clay loam	
20-22	10YR 5/1	100%					Sandy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- x Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/18/21

Feature Name: JD_W_019

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_019_UP

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.817772 Long: -75.986661 Datum: WGS84

Soil Map Unit Name: 33E - Rumford fine sandy loam, 6 to 35 percent slopes NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____	No x	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_019_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	50	Yes	FAC
2. Quercus alba, Northern White Oak	20	Yes	FACU
3. Liquidambar styraciflua, Sweet-Gum	15	No	FAC
4. Acer rubrum, Red Maple	10	No	FAC
5.			
6.			
	95	= Total Cover	
50% of total cover: 47.5	20% of total cover: 19		
Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
2. Quercus alba, Northern White Oak	15	Yes	FACU
3.			
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		
Shrub Stratum (Plot size: 30 ft)			
1. Asimina triloba, Common Pawpaw	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Asimina triloba, Common Pawpaw	15	Yes	FAC
2. Pteridium aquilinum, Northern Bracken Fern	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	180 (A)		590 (B)

Prevalence Index = B/A = 3.28

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_019_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/2	100%					Loam	
1-20	10YR 6/3	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/18/21

Feature Name: JD_W_019 UP

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/21/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W23_PEM

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770347 Long: -76.051416 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam 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 _____ No x

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:

Data point taken within an existing cleared utility easement.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: JD_W23_PEM

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Carex lurida, Shallow Sedge	30	Yes	OBL
2. Typha angustifolia, Narrow-Leaf Cat-Tail	20	Yes	OBL
3. Scirpus cyperinus, Cottongrass Bulrush	15	No	OBL
4. Juncus effusus, Lamp Rush	15	No	OBL
5. Portulaca oleracea, Little-Hogweed	5	No	FACU
6. Eleocharis palustris, Common Spike-Rush	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	90 (A)		105 (B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: JD_W23_PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/1	100%					Loam	
5-13	10YR 4/1	95%	10YR 4/6	5%	C	PL	Clay loam	
13-20	10YR 5/1	90%	10YR 4/6	10%	C	PL	Sandy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/22/21

Feature Name: JD_W_023_PEM

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/21/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_023_PFO

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77059 Long: -76.051505 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: PFO

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: JD_W_023_PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	30	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
3. Quercus michauxii, Swamp Chestnut Oak	15	Yes	FACW
4. Carya ovata, Shag-Bark Hickory	15	Yes	FACU
5.			
6.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Carpinus caroliniana, American Hornbeam	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Shrub Stratum (Plot size: 30 ft)			
1. Morella cerifera, Southern Bayberry	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	40	Yes	FACW
2. Carex lurida, Shallow Sedge	10	No	OBL
3. Ludwigia palustris, Marsh Primrose-Willow	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	15	Yes	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	55	x 2 =	110
FAC species	110	x 3 =	330
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	200 (A)		520 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_W_023_PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100%					Loam	
3-17	10YR 4/2	90%	10YR 4/6	10%	C	M	Sandy clay loam	
17-20	10YR 5/1	100%					Sandy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/22/21

Feature Name: JD_W_023_PFO

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/21/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_W_023_UP

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770242 Long: -76.051605 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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 _____ No x

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:

The data point was taken within an existing cleared utility easement.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_W_023_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Lolium perenne, Perennial Rye Grass	90	Yes	FACU
2. Portulaca oleracea, Little-Hogweed	5	No	FACU
3. Trifolium repens, White Clover	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: JD_W_023_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/3	100%					Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/22/21

Feature Name: JD_W_023_UP

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_001

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.769936 Long: -76.039145 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 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:

Data point taken within an existing overhead utility easement.

Observed Classifications:

Cowardin: _____

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)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

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

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:

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

Sampling Point: RD_W_001

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Phragmites australis, Common Reed	75	Yes	FACW
2. Juncus effusus, Lamp Rush	15	No	OBL
3. Carex crinita, Fringed Sedge	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		185 (B)

Prevalence Index = B/A = 1.85

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: RD_W_001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100%					Silty clay	
4-20	10YR 4/1	100%					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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

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

Remarks:

Photograph Log

Date: 5/18/21

Feature Name: RD_W_001

Photograph Direction East

Comments:

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W-001_UP

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.769953 Long: -76.039247 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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:
Data point taken within a mowed/maintained grassed area.

Observed Classifications:
Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:
No hydrology indicators observed.

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

Sampling Point: RD_W_001_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Cynodon dactylon, Bermuda Grass	60	Yes	FACU
2. Plantago lanceolata, English Plantain	15	No	FACU
3. Potentilla indica, Indian-Strawberry	10	No	FACU
4. Trifolium repens, White Clover	10	No	FACU
5. Taraxacum officinale, Common Dandelion	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

Maintained Land - 3-6" stubble

SOIL

Sampling Point: RD_W-001_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: Hard Clay Pack

Depth (inches): 8

Hydric Soil Present? Yes _____ No x

Remarks:

Restrictive compacted layer preventing full soil profile (20") from being evaluated.

Photograph Log

Date: 5/18/21

Feature Name: RD_W_001_UP

Photograph Direction West

Comments: View of soil core

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_002

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.772899 Long: -76.034937 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 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:

Observed Classifications:

Cowardin: _____

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)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes x	No _____	Depth (inches): 6"
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:

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

Sampling Point: RD_W_002

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15 ft)			
1. Pinus taeda, Loblolly Pine	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Shrub Stratum (Plot size: 30 ft)			
1. Morella cerifera, Southern Bayberry	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft)			
1. Typha angustifolia, Narrow-Leaf Cat-Tail	70	Yes	OBL
2. Juncus effusus, Lamp Rush	10	No	OBL
3. Persicaria sagittata, Arrow-Leaf Tearthumb	5	No	OBL
4. Carex lurida, Shallow Sedge	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_002

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/1	100%					Silty clay	
8-20	10YR 6/1	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

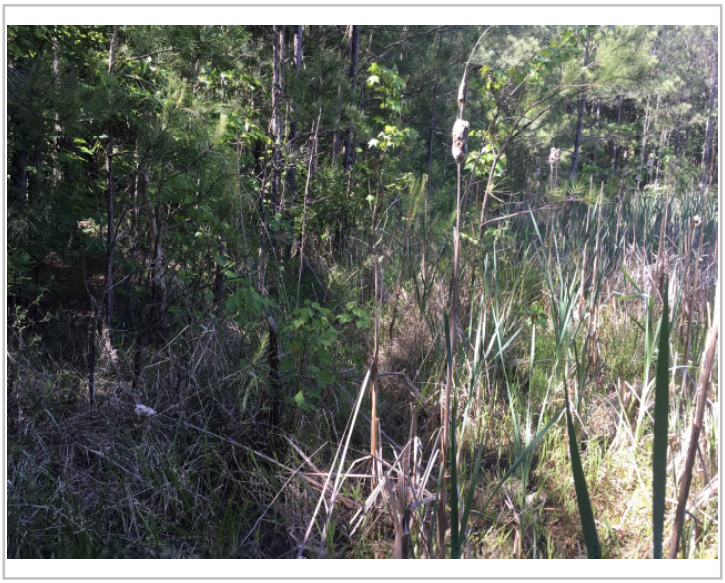
Hydric Soil Present? **Yes** x **No** ___

Remarks:

Photograph Log

Date: 5/18/21

Feature Name: RD_W_002



Photograph Number 1

Photograph Direction

Comments: Veiw of ground

Photograph Number 2

Photograph Direction

Comments:

Photograph Number 3

Photograph Direction

Comments:

Photograph Number 4

Photograph Direction

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_002_UP

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77279 Long: -76.034881 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:

No hydrology indicators observed.

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

Sampling Point: RD_W_002_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	60	Yes	FAC
2. Pyrus calleryana, Callery Pear	10	No	UPL
3. Liquidambar styraciflua, Sweet-Gum	10	No	FAC
4.			
5.			
6.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Morella cerifera, Southern Bayberry	10	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	5	Yes	FAC
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft)			
1. Apocynum androsaemifolium, Spreading Dogbane	5	Yes	UPL
2. Toxicodendron radicans, Eastern Poison Ivy	5	Yes	FAC
3. Parthenocissus quinquefolia, Virginia-Creeper	5	Yes	FACU
4. Acer rubrum, Red Maple	5	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	5	x 4 =	20
UPL species	15	x 5 =	75
Column Totals:	115 (A)		380 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_002_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100%					Silty clay loam	
8-20	10YR 4/2	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

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

Remarks:

Photograph Log

Date: 5/18/21

Feature Name: RD_W_002_UP

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_003

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770224 Long: -76.042171 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 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:

Data point taken within existing overhead utility easement. Surface water drains from wetland through RD_S_002.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

Surface water drains from wetlands to RD-S2

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

Sampling Point: RD_W_003

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Phragmites australis, Common Reed	50	Yes	FACW
2. Solidago rugosa, Wrinkle-Leaf Goldenrod	25	Yes	FAC
3. Juncus effusus, Lamp Rush	25	Yes	OBL
4. Carex crinita, Fringed Sedge	25	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	75	x 2 =	150
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		250 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: RD_W_003

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/2	95%	10YR 5/6	5%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: Hard Pack Clay

Depth (inches): 10

Hydric Soil Present? Yes x No ___

Remarks:

Restrictive layer at 10 inches which prevented evaluation of the full soil profile (20 inches).

Photograph Log

Date: 5/18/21

Feature Name: RD_W_003

Photograph Number 1

Photograph Direction South

Comments:

Photograph Number 2

Photograph Direction North

Comments:

Photograph Number 3

Photograph Direction West

Comments:

Photograph Number 4

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W003/W004_UP

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770094 Long: -76.041275 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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:
Data point taken within a maintained lawn.

Observed Classifications:
Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No x

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

Remarks:
No hydrology indicators observed.

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

Sampling Point: RD_W003/W004_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Cynodon dactylon, Bermuda Grass	50	Yes	FACU
2. Dactylis glomerata, Orchard Grass	20	Yes	FACU
3. Hieracium greenii, Green's Hawkweed	5	No	FACU
4. Ranunculus abortivus, Kidney-Leaf Buttercup	5	No	FACW
5. Potentilla indica, Indian-Strawberry	5	No	FACU
6. Oxalis stricta, Upright Yellow Wood-Sorrel	5	No	UPL
7. Rumex crispus, Curly Dock	5	No	FAC
8. Trifolium repens, White Clover	5	No	FACU
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	5	x 3 =	15
FACU species	85	x 4 =	340
UPL species	5	x 5 =	25
Column Totals:	100 (A)		390 (B)

Prevalence Index = B/A = 3.90

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

Maintained lawn / Numerous lawn species

SOIL

Sampling Point: RD_W003/W004_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	100%					Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: Hard pack soil

Depth (inches): 10

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

Remarks:

Photograph Log

Date: 5/18/21

Feature Name: RD_W003/W004_UP

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_004

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770045 Long: -76.040542 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 x No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes x No _____	

Remarks:

The western portion of wetland RD_W_004 is maintained within the existing overhead utility easement. Surface water witin the wetland is drained through RD_S_003.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes x No _____

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

Remarks:

-Western part of wetland moved - Surface water from wetlands drains to RD-SS…

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

Sampling Point: RD_W_004

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Juncus effusus, Lamp Rush	80	Yes	OBL
2. Juncus tenuis, Lesser Poverty Rush	10	No	FAC
3. Carex crinita, Fringed Sedge	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: RD_W_004

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/1	95%	5YR 4/6	5%			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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: Hard packed clay

Depth (inches): 10

Hydric Soil Present? Yes x No ___

Remarks:

Hard pack disturbed clay restrictive layer prevented evaluation of a full soil profile (20 inches).

Photograph Log

Date: 5/18/21

Feature Name: RD_W_004

Photograph Number 1

Photograph Direction West

Comments:

Photograph Number 2

Photograph Direction East

Comments:

Photograph Number 3

Photograph Direction North

Comments:

Photograph Number 4

Photograph Direction South

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_005PEM

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77037 Long: -76.062154 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam 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 x No _____	**Is the Sampled Area within a Wetland?** Yes _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes x No _____	

Remarks:

Data point taken within an existing overhead utility easement characterized as a highly disturbed area with rutting and mixed mesic wetland and upland microtopography.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes x No _____

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

Remarks:

PEM

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

Sampling Point: RD_W_005PEM

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Juncus effusus, Lamp Rush	60	Yes	OBL
2. Carex vulpinoidea, Common Fox Sedge	10	No	FACW
3. Carex crinita, Fringed Sedge	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		100 (B)

Prevalence Index = B/A = 1.25

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: RD_W_005PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	90%	10YR 5/6	10%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

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

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_005 PEM

Photograph Number 1

Photograph Direction West

Comments:

Photograph Number 2

Photograph Direction South

Comments:

Photograph Number 3

Photograph Direction East

Comments:

Photograph Number 4

Photograph Direction North

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_005 PEM

Photograph Number 5

Photograph Direction _____

Comments: View of soil core

Photograph Number 6

Photograph Direction _____

Comments:

Photograph Number 7

Photograph Direction _____

Comments:

Photograph Number 8

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W-005-PFO

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770159 Long: -76.062632 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: PFO

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:

Data point was taken within the forested portion of RD_W_005. The PEM characteristics of RD_W_005 are similar to those depicted on dataform RD_W3.

Observed Classifications:

Cowardin: _____

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- x Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- x Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- x Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- x Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- x Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes x No _____

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

Remarks:

Buttressed trunks were observed within the wetland.

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

Sampling Point: RD_W_005-PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	25	Yes	FAC
2. Fraxinus pennsylvanica, Green Ash	25	Yes	FACW
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft)			
1. N/A	5	Yes	
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft)			
1. Carex crinita, Fringed Sedge	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		195 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_005-PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100%					Silty loam	
8-20	10YR 5/1	95%	10YR 3/6	5%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes x No ___

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_005-PFO

Photograph Number 1

Photograph Direction South

Comments:

Photograph Number 2

Photograph Direction East

Comments:

Photograph Number 3

Photograph Direction West

Comments:

Photograph Number 4

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W-005_UP

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770202 Long: -76.062583 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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:
High spot within wetland characterized as an upland forest.

Observed Classifications:
Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

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

Sampling Point: RD_W_005_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda, Loblolly Pine	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Lonicera japonica, Japanese Honeysuckle	10	Yes	FACU
2. Parthenocissus quinquefolia, Virginia-Creeper	10	Yes	FACU
3. Morella cerifera, Southern Bayberry	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	95 (A)		305 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: RD_W_005_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	50%						
	10YR 5/6	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_005_UP

Photograph Direction _____

Comments: View of soil core

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Direction West

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_005_UP

Photograph Direction East

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_006

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77037 Long: -76.062154 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam 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 x No _____	**Is the Sampled Area within a Wetland?** Yes _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes x No _____	

Remarks:

Data point taken within an existing overhead utility easement characterized as a highly disturbed area with rutting and mixed mesic wetland and upland microtopography.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes x No _____

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

Remarks:

PEM

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

Sampling Point: RD_W_006

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Juncus effusus, Lamp Rush	60	Yes	OBL
2. Carex vulpinoidea, Common Fox Sedge	10	No	FACW
3. Carex crinita, Fringed Sedge	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		100 (B)

Prevalence Index = B/A = 1.25

Hydrophytic Vegetation Indicators:

- x 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_006

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	90%	10YR 5/6	10%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes x No ___

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_006

Photograph Number 1

Photograph Direction West

Comments:

Photograph Number 2

Photograph Direction South

Comments:

Photograph Number 3

Photograph Direction East

Comments:

Photograph Number 4

Photograph Direction North

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_006

Photograph Number 5

Photograph Direction _____

Comments: View of soil core

Photograph Number 6

Photograph Direction _____

Comments:

Photograph Number 7

Photograph Direction _____

Comments:

Photograph Number 8

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W006/W007_UP

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770302 Long: -76.061765 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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:

Data point taken adjacent to a gravel road characterized as an early successional ecotone.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

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

Sampling Point: RD_W006/W007_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Lolium perenne, Perennial Rye Grass	65	Yes	FACU
2. Ranunculus abortivus, Kidney-Leaf Buttercup	20	Yes	FACW
3. Plantago lanceolata, English Plantain	5	No	FACU
4. Rumex crispus, Curly Dock	5	No	FAC
5. Thunbergia erecta, Bush Clockvine	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	100 (A)		350 (B)

Prevalence Index = B/A = 3.50

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: RD_W006/W007_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/2	100%					Silty loam	to Sandy

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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** x

Remarks:

Restrictive gravel layer preventing evaluation of full soil profile (20 inches).

Photograph Log

Date: 5/19/21

Feature Name: RD_W006/W007_UP

Photograph Direction _____

Comments: View of soil core

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction North

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W006/W007_UP

Photograph Direction West

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_007

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770116 Long: -76.061666 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam 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 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:

This area was observed as an isolated depression, potentially caused by the construction of the gravel access road through RD_W_006, sectioning off RD_W_007.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- x 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No x	Depth (inches): N/A
Water Table Present?	Yes _____	No x	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No x	Depth (inches): N/A

Wetland Hydrology Present? Yes x No _____

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

Remarks:

Microtopography was observed within the depressional wetland.

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

Sampling Point: RD_W_007

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling Stratum (Plot size: 15 ft)			
1. Fraxinus pennsylvanica, Green Ash	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Fraxinus pennsylvanica, Green Ash	5	Yes	FACW
2. Acer rubrum, Red Maple	5	Yes	FAC
3. Juncus effusus, Lamp Rush	5	Yes	OBL
4. Phragmites australis, Common Reed	5	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	35 (A)		80 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_007

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100%					Sandy clay loam	
8-20	10YR 5/1	70%	10YR 4/6	30%	C	PL	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes x No ___

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_007

Photograph Number 1

Photograph Direction West

Comments:

Photograph Number 2

Photograph Direction South

Comments:

Photograph Number 3

Photograph Direction North

Comments:

Photograph Number 4

Photograph Direction East

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_007

Photograph Number 5

Photograph Direction _____

Comments: View of soil core

Photograph Number 6

Photograph Direction _____

Comments:

Photograph Number 7

Photograph Direction _____

Comments:

Photograph Number 8

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_008

Investigator(s): R. Delahunty Section, Township, Range:

Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770355 Long: -76.063251 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam 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 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:

Data point was taken within an existing overhead utility easement.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

An ephemeral stream was observed adjoining this wetland.

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

Sampling Point: RD_W_008

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5 ft)			
1. Juncus effusus, Lamp Rush	50	Yes	OBL
2. Carex scoparia, Pointed Broom Sedge	10	No	FACW
3. Carex vulpinoidea, Common Fox Sedge	10	No	FACW
4. Carex crinita, Fringed Sedge	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		110 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

SOIL

Sampling Point: RD_W_008

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	95%	10YR 4/6	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

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

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_008

Photograph Direction East

Comments:

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 5/19/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_008_UP

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770315 Long: -76.063082 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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 _____ No x

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 x No _____	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Data point was taken within an existing overhead utility easement characterized by early successional vegetation. Soils meet the depleted matrix hydric indicator, possibly due to relic wetland conditions; however, hydrology and vegetation do not meet the wetland criteria.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes _____ No x Depth (inches): N/A

Water Table Present? Yes _____ No x Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

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

Sampling Point: RD_W_008_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Parthenocissus quinquefolia, Virginia-Creeper	15	Yes	FACU
2. Lonicera japonica, Japanese Honeysuckle	15	Yes	FACU
3. Achillea millefolium, Common Yarrow	15	Yes	FACU
4. Digitaria sanguinalis, Hairy Crab Grass	10	No	FACU
5. Solidago rugosa, Wrinkle-Leaf Goldenrod	10	No	FAC
6. Dactylis glomerata, Orchard Grass	5	No	FACU
7. Rubus argutus, Saw-Tooth Blackberry	5	No	FAC
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	75 (A)		285 (B)

Prevalence Index = B/A = 3.80

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: RD_W_008_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	95%	10YR 5/6	5%			Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): None

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

Remarks:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_008_UP

Photograph Direction East

Comments:

Photograph Direction West

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Log

Date: 5/19/21

Feature Name: RD_W_008_UP

Photograph Direction _____

Comments: View of soil core

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_009

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77018 Long: -76.04381 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 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:

Data point was taken within an existing overhead utility easement.

Observed Classifications:

Cowardin: _____

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)
- x Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

Saturation was observed at approximately 16 inches. This wetland is contiguous with RD_S_005.

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

Sampling Point: RD_W_009

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Iva annua, Annual Marsh-Elder	5	Yes	FAC
2. Fraxinus pennsylvanica, Green Ash	5	Yes	FACW
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Carex crinita, Fringed Sedge	40	Yes	FACW
2. Juncus effusus, Lamp Rush	40	Yes	OBL
3. Saururus cernuus, Lizard's-Tail	5	No	OBL
4. Carex scoparia, Pointed Broom Sedge	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W_009

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	98%	10YR 4/6	2%	C	M	Sandy clay loam	
8-20	7.5YR 4/1	98%	7.5YR 4/6	2%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes x No ___

Remarks:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_009

Photograph Number 1

Photograph Direction North

Comments:

Photograph Number 2

Photograph Direction East

Comments:

Photograph Number 3

Photograph Direction South

Comments:

Photograph Number 4

Photograph Direction West

Comments:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_009

Photograph Number 5

Photograph Direction _____

Comments: View of soil core

Photograph Number 6

Photograph Direction _____

Comments:

Photograph Number 7

Photograph Direction _____

Comments:

Photograph Number 8

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_009-011_UP

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.77026 Long: -76.048172 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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:

Data point taken adjacent to a raised unimproved access road and characterized by early successional vegetation.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:

No hydrology indicators observed.

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

Sampling Point: RD_W_009-011_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Apocynum androsaemifolium, Spreading Dogbane	80	Yes	UPL
2. Parthenocissus quinquefolia, Virginia-Creeper	10	No	FACU
3. Lolium perenne, Perennial Rye Grass	5	No	FACU
4. Solidago rugosa, Wrinkle-Leaf Goldenrod	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	15	x 4 =	60
UPL species	80	x 5 =	400
Column Totals:	100 (A)		475 (B)

Prevalence Index = B/A = 4.75

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: RD_W_009-011_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100%					Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: Raised access road

Depth (inches): 6

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

Remarks:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_009-011_UP

Photograph Direction West

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction North

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 5/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_010

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770368 Long: -76.068678 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam 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 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:

Data point taken in right-of-way, located between forested wetland conditions and an upland maintained lawn.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along 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)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- x Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: RD_W_010

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Eleocharis palustris, Common Spike-Rush	60	Yes	OBL
2. Carex crinita, Fringed Sedge	30	Yes	FACW
3. Juncus effusus, Lamp Rush	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes [x] No [ ]

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

Vegetation observed within the forested wetland include Acer rubrum, Salix nigra, and Liquidambar styraciflua.

SOIL

Sampling Point: RD_W_010

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/1	98%	10YR 5/6	2%	C	PL	Sandy clay	
10-20	GLY 4/1	95%	10YR 5/4	5%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes x No ___

Remarks:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_010

Photograph Number 1

Photograph Direction East

Comments:

Photograph Number 2

Photograph Direction North

Comments:

Photograph Number 3

Photograph Direction West

Comments:

Photograph Number 4

Photograph Direction South

Comments:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_010

Photograph Number 5

Photograph Direction _____

Comments: View of soil core

Photograph Number 6

Photograph Direction _____

Comments:

Photograph Number 7

Photograph Direction _____

Comments:

Photograph Number 8

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD_W_010_UP

Investigator(s): R. Delahunty Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770417 Long: -76.068884 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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:
Data point taken within a maintained park lawn within a residential neighborhood.

Observed Classifications:
Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:
No hydrology indicators were observed.

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

Sampling Point: RD_W_010_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Cynodon dactylon, Bermuda Grass	55	Yes	FACU
2. Ranunculus abortivus, Kidney-Leaf Buttercup	10	No	FACW
3. Juncus tenuis, Lesser Poverty Rush	10	No	FAC
4. Oxalis stricta, Upright Yellow Wood-Sorrel	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	55	x 4 =	220
UPL species	5	x 5 =	25
Column Totals:	80 (A)		295 (B)

Prevalence Index = B/A = 3.69

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: RD_W_010_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/3	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

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

Restrictive Layer (if observed):

Type: Hard pack clay

Depth (inches): 6

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

Remarks:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_010_UP

Photograph Direction North

Comments:

Photograph Direction _____

Comments: View of soil core

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_010_UP

Photograph Direction West

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: RD-W011-PFO

Investigator(s): R. Delahunty Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.770312 Long: -76.048252 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: PFO

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)

- x 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:

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

Sampling Point: RD_W011_PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum, Red Maple	30	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
3. Quercus michauxii, Swamp Chestnut Oak	15	Yes	FACW
4. Carya ovata, Shag-Bark Hickory	15	Yes	FACU
5.			
6.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Carpinus caroliniana, American Hornbeam	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Shrub Stratum (Plot size: 30 ft)			
1. Morella cerifera, Southern Bayberry	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	40	Yes	FACW
2. Carex lurida, Shallow Sedge	10	No	OBL
3. Ludwigia palustris, Marsh Primrose-Willow	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	15	Yes	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	55	x 2 =	110
FAC species	110	x 3 =	330
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	200 (A)		520 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: RD_W011_PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100%					Loam	
3-17	10YR 4/2	90%	10YR 4/6	10%	C	M	Sandy clay loam	
17-20	10YR 5/1	100%					Sandy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/20/21

Feature Name: RD_W_011

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Chesapeake Sampling Date: 5/6/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_UP_001

Investigator(s): Emily Foster, Debbie Painter Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153A of LRR T Lat: 36.6545553 Long: -76.1527222 Datum: WGS84

Soil Map Unit Name: Tomotley-Nimmo complex, 0 to 1 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 x, Soil x, 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 _____	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:
Well drained field drained by a series of agricultural ditches. Fallow field/hayfield.

Observed Classifications:
Cowardin: upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:
No hydric indicators.

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

Sampling Point: EF_UP_001

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Trifolium repens, White Clover	35		FACU
2. Lolium perenne, Perennial Rye Grass	45		FACU
3. Ranunculus sardous, Hairy Buttercup	25		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	105 (A)		395 (B)

Prevalence Index = B/A = 3.76

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: EF_UP_001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5y 5/1	100%					Silty 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/6/21

Feature Name: EF_UP_001

Photograph Number _____

Photograph Direction South

Comments:

Photograph Number _____

Photograph Direction North

Comments:

Photograph Number _____

Photograph Direction East

Comments:

Photograph Number _____

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_002_UP

Investigator(s): Emily Foster Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.75783 Long: -76.093306 Datum: WGS84

Soil Map Unit Name: Nimmo loam 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 x, Soil x, 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 _____	No x	**Is the Sampled Area within a Wetland?** Yes _____ No x
Hydric Soil Present?	Yes x	No _____	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:

Observed Classifications:

Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_002_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Lolium perenne, Perennial Rye Grass	30	Yes	FACU
2. Anthoxanthum odoratum, Large Sweet Vernal Grass	30	Yes	FACU
3. Juncus effusus, Lamp Rush	5	No	OBL
4. Apocynum cannabinum, Indian-Hemp	5	No	FACU
5. Juncus articulatus, Joint-Leaf Rush	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	75 (A)		270 (B)

Prevalence Index = B/A = 3.60

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: EF_002_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/3	100%					Sandy loam	
6-12	10 yr 4/2	95%	10yr 5/6	5%			Sandy loam	
12-18	10yr 5/2	90%	10yr 5/6	10%			Sandy 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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
x Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Reduced soils but no hydrology indicators. Very dry and crumbly.

Photograph Log

Date: 5/13/21

Feature Name: EF_EF_002_UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_003_UP

Investigator(s): Emily Foster, RJ Brydon Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.756696 Long: -76.093596 Datum: WGS84

Soil Map Unit Name: Nimmo loam 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 x No _____	**Is the Sampled Area within a Wetland?** Yes _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Upland forest drained by abandoned agricultural ditchhes. Positive for soils and vegetation, but no indicators for hydrology. Extremely large oak and beech trees scattered throughout, 36+ inches dbh.

Observed Classifications:

Cowardin: upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:

No saturation or hydrollogy indicators.

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

Sampling Point: EF_003_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus michauxii, Swamp Chestnut Oak	40	Yes	FACW
2. Fagus grandifolia, American Beech	40	Yes	FACU
3. Liquidambar styraciflua, Sweet-Gum	15	No	FAC
4.			
5.			
6.			
	95	= Total Cover	
50% of total cover: 47.5	20% of total cover: 19		
Sapling Stratum (Plot size: 30 ft)			
1. Asimina triloba, Common Pawpaw	10	Yes	FAC
2. Acer rubrum, Red Maple	5	Yes	FAC
3. Vaccinium corymbosum, Highbush Blueberry	5	Yes	FACW
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria gigantea, Giant Cane	55	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	5	Yes	FAC
2.			
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: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	35	x 3 =	105
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	175 (A)		465 (B)

Prevalence Index = B/A = 2.66

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_003_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10yr 3/2	100%					Loam	
8-12	10yr 4/2	100%					Clay loam	
12-18	10yr 4/2	90%	10yr 4/6	10%			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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Meets F3, likely relic coloration from prior to drained conditions. Soil is slightly moist. Seems well drained by ditches.

Photograph Log

Date: 5/13/21

Feature Name: EF_003_UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_004_UP

Investigator(s): Emily Foster, RJ Brydon Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.749981 Long: -76.095785 Datum: WGS84

Soil Map Unit Name: Acredale silt loam 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 x, Soil x, 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 _____	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:
Well drained upand ag. field. No living vegetation.

Observed Classifications:
Cowardin: upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_004_UP

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = 0.00

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

No living vegetation.Upland fallow ag. field.

SOIL

Sampling Point: EF_004_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5yr 3/2	100%					Silty 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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/13/21

Feature Name: EF_004_UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_005_UP

Investigator(s): Emily Foster, RJ Brydon Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.742601 Long: -76.100155 Datum: WGS84

Soil Map Unit Name: Nimmo loam 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 x, Soil x, 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 _____ No x
Hydric Soil Present?	Yes _____	No x	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:
Fallow field, well drained

Observed Classifications:
Cowardin: upand

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_005_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Juncus tenuis, Lesser Poverty Rush	25	Yes	FAC
2. Anthoxanthum odoratum, Large Sweet Vernal Grass	25	Yes	FACU
3. Ranunculus sardous, Hairy Buttercup	20	Yes	FAC
4. Juncus articulatus, Joint-Leaf Rush	20	Yes	OBL
5. Solidago canadensis, Canadian Goldenrod	10	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	100 (A)		295 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_005_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10yr 3/2	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/13/21

Feature Name: EF_005_UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: EF_006_UP

Investigator(s): Emily Foster, RJ Brydon Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.744658 Long: -76.098581 Datum: WGS84

Soil Map Unit Name: Tomotley loam NWI classification: PSS1/4B

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

Are Vegetation _____, Soil x, 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 _____ No x
Hydric Soil Present?	Yes x No _____	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Upland forest, moist mesic, with relic F3 soil coloring from pre-drained conditions. No hydrology indicators.

Observed Classifications:

Cowardin: UPL

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: EF_006_UP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra, Northern Red Oak	35	Yes	FACU
2. Liquidambar styraciflua, Sweet-Gum	30	Yes	FAC
3. Acer rubrum, Red Maple	25	Yes	FAC
4. Pinus taeda, Loblolly Pine	15	No	FAC
5.			
6.			
	105	= Total Cover	
50% of total cover: 52.5	20% of total cover: 21		
Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	25	Yes	FAC
2. Acer rubrum, Red Maple	15	Yes	FAC
3.			
4.			
5.			
6.			
	40	= Total Cover	
50% of total cover: 20	20% of total cover: 8		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Microstegium vimineum, Japanese Stilt Grass	25	Yes	FAC
2. Toxicodendron radicans, Eastern Poison Ivy	10	Yes	FAC
3. Juncus effusus, Lamp Rush	5	No	OBL
4. Lonicera japonica, Japanese Honeysuckle	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

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: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	145	x 3 =	435
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	190 (A)		600 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: EF_006_UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2	100%					Silty loam	
6-18	10yr 5/2	95%	10yr 5/4	5%	C	M	Silty loam	compacted

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

relic hydric soil colloring for F3, soil is dry and crumbly

Photograph Log

Date: 5/13/21

Feature Name: EF_006_UP

Photograph Direction North

Comments: None.

Photograph Direction South

Comments: None.

Photograph Direction East

Comments: None.

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/4/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_03

Investigator(s): J. Daugustine, B. Harris Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.769868 Long: -76.072321 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____	No x	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:

Hydrophytic vegetation passes with facultative species.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_03

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia, American Beech	40	Yes	FACU
2. Liquidambar styraciflua, Sweet-Gum	20	Yes	FAC
3. Acer rubrum, Red Maple	15	No	FAC
4. Quercus rubra, Northern Red Oak	10	No	FACU
5. Pinus virginiana, Virginia Pine	10	No	UPL
6. Carya glabra, Pignut Hickory	5	No	FACU
	100	= Total Cover	
50% of total cover: 50	20% of total cover: 20		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	15	Yes	FAC
2. Magnolia virginiana, Sweet-Bay	5	Yes	FACW
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft)			
1. Asimina triloba, Common Pawpaw	15	Yes	FAC
2. Magnolia virginiana, Sweet-Bay	10	Yes	FACW
3. Carya glabra, Pignut Hickory	5	No	FACU
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 30 ft)			
1. Mitchella repens, Partridge-Berry	20	Yes	FACU
2. Vaccinium angustifolium, Late Lowbush Blueberry	10	Yes	FACU
3. Asimina triloba, Common Pawpaw	10	Yes	FAC
4. Carex swanii, Swan's Sedge	5	No	UPL
5. Acer rubrum, Red Maple	5	No	FAC
6. Pinus virginiana, Virginia pine	5	No	UPL
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 70.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	90	x 3 =	270
FACU species	90	x 4 =	360
UPL species	20	x 5 =	100
Column Totals:	215 (A)		760 (B)

Prevalence Index = B/A = 3.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_UP_03

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100%					Loam	
2-19	2.5Y 6/3	90%	10YR 5/6	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Soil contains redoximorphic features but the matrix is not depleted enough to meet any hydric soil indicator.

Photograph Log

Date: 5/4/21

Feature Name: JD_UP_03

Photograph Number _____

Photograph Direction North

Comments: Upstream.

Photograph Number _____

Photograph Direction South

Comments: Downstream.

Photograph Number _____

Photograph Direction East

Comments: None.

Photograph Number _____

Photograph Direction West

Comments: None.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/12/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_006

Investigator(s): J. D'Augustine, L. Donston Section, Township, Range: _____

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.75872 Long: -76.085515 Datum: WGS84

Soil Map Unit Name: 38 - Tomotley loam NWI classification: N/A

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 _____ No x

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Data point taken within an existing utility easement, overgrown with opportunistic Arundinaria tecta (FACW).

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_006

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Solidago rugosa, Wrinkle-Leaf Goldenrod	50	Yes	FAC
2. Arundinaria tecta, Switch Cane	45	Yes	FACW
3. Eupatorium capillifolium, Dog-Fennel	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft)			
1. Lonicera japonica, Japanese Honeysuckle	30	Yes	FACU
2. Rubus argutus, Saw-Tooth Blackberry	15	Yes	FAC
3. Vitis rotundifolia, Muscadine	5	No	FAC
4.			
5.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		

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: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	70	x 3 =	210
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	150 (A)		440 (B)

Prevalence Index = B/A = 2.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: JD_UP_006

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100%					Sandy loam	
5-20	10YR 4/3	100%					Sandy 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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/12/21

Feature Name: JD_UP_006

Photograph Number _____

Photograph Direction West

Comments: None.

Photograph Number _____

Photograph Direction _____

Comments:

Photograph Number _____

Photograph Direction _____

Comments:

Photograph Number _____

Photograph Direction _____

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_007

Investigator(s): J. D'Augustine, L. Donston Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.769891 Long: -76.078348 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_007

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua, Sweet-Gum	25	Yes	FAC
2. Quercus falcata, Southern Red Oak	25	Yes	FACU
3. Acer rubrum, Red Maple	15	No	FAC
4. Pinus taeda, Loblolly Pine	10	No	FAC
5. Liriodendron tulipifera, Tuliptree	10	No	FACU
6.			
	85	= Total Cover	
50% of total cover: 42.5	20% of total cover: 17		
Sapling Stratum (Plot size: 30 ft)			
1. Quercus falcata, Southern Red Oak	20	Yes	FACU
2. Carya glabra, Pignut Hickory	10	Yes	FACU
3. Liquidambar styraciflua, Sweet-Gum	5	No	FAC
4. Acer rubrum, Red Maple	5	No	FAC
5. Quercus michauxii, Swamp Chestnut Oak	5	No	FACW
6.			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover: 9		
Shrub Stratum (Plot size: 30 ft)			
1. Quercus falcata, Southern Red Oak	15	Yes	FACU
2. Vaccinium angustifolium, Late Lowbush Blueberry	5	Yes	FACU
3. Pinus taeda, Loblolly Pine	5	Yes	FAC
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 30 ft)			
1. Carex swanii, Swan's Sedge	10	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 30 ft)			
1. Smilax rotundifolia, Horsebrier	5	Yes	FAC
2. Parthenocissus quinquefolia, Virginia-Creeper	5	Yes	FACU
3. Vitis rotundifolia, Muscadine	5	Yes	FAC
4. Lonicera japonica, Japanese Honeysuckle	5	Yes	FACU
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: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	75	x 3 =	225
FACU species	95	x 4 =	380
UPL species	10	x 5 =	50
Column Totals:	185 (A)		665 (B)

Prevalence Index = B/A = 3.59

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: JD_UP_007

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100%					Loam	
2-11	10YR 5/2	100%					Clay loam	
11-20	10YR 5/2	98%	10YR 4/6	2%	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Depleted matrix with redoximorphic features were observed within the lower 11-20 inches; however, this depth does not meet any hydric soil indicators.

Photograph Log

Date: 5/13/21

Feature Name: JD_UP_007

Photograph Direction South

Comments:

Photograph Direction North

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/13/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_008

Investigator(s): J. D'Augustine, L. Donston Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.768903 Long: -76.075408 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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 _____ No x
Hydric Soil Present?	Yes _____ No x	
Wetland Hydrology Present?	Yes _____ No x	

Remarks:

Hydrophytic vegetation passes with predominantly facultative species. Soil was characterized with a depleted matrix and redoximorphic features at a depth that did not meet hydric soil indicators, possibly indicating relic wetland conditions.

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_008

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liriodendron tulipifera, Tuliptree	30	Yes	FACU
2. Acer rubrum, Red Maple	20	Yes	FAC
3. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
4. Carya glabra, Pignut Hickory	10	No	FACU
5.			
6.			
	75	= Total Cover	
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Acer rubrum, Red Maple	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		
Shrub Stratum (Plot size: 30 ft)			
1. Carya glabra, Pignut Hickory	5	Yes	FACU
2. Vaccinium angustifolium, Late Lowbush Blueberry	5	Yes	FACU
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 30 ft)			
1. Toxicodendron radicans, Eastern Poison Ivy	10	Yes	FAC
2. Lonicera japonica, Japanese Honeysuckle	10	Yes	FACU
3. Smilax rotundifolia, Horsebrier	5	Yes	FAC
4.			
5.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	60	x 3 =	180
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	140 (A)		460 (B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JD_UP_008

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100%					Loam	
2-13	2.5Y 4/1	100%					Clay loam	
13-20	2.5Y 4/2	98%	2.5Y 5/6	2%	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Depleted matrix with redoximorphic features were observed within the lower 11-20 inches; however, this depth does not meet any hydric soil indicators.

Photograph Log

Date: 5/13/21

Feature Name: JD_UP_008

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/14/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_009

Investigator(s): J. D'Augustine, R. Brydon Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.759597 Long: -76.103087 Datum: WGS84

Soil Map Unit Name: 24 - Nimmo loam NWI classification: N/A

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_009

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua, Sweet-Gum	40	Yes	FAC
2. Carya glabra, Pignut Hickory	20	Yes	FACU
3. Pinus taeda, Loblolly Pine	10	No	FAC
4. Quercus falcata, Southern Red Oak	5	No	FACU
5.			
6.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling Stratum (Plot size: 30 ft)			
1. Liquidambar styraciflua, Sweet-Gum	15	Yes	FAC
2. Carya glabra, Pignut Hickory	10	Yes	FACU
3. Elaeagnus umbellata, Autumn Olive	5	No	UPL
4.			
5.			
6.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Shrub Stratum (Plot size: 30 ft)			
1. Carya glabra, Pignut Hickory	15	Yes	FACU
2. Elaeagnus umbellata, Autumn Olive	5	Yes	UPL
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	40	Yes	FACW
2. Ligustrum sinense, Chinese Privet	10	No	FAC
3. Ilex opaca, American Holly	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 30 ft)			
1. Parthenocissus quinquefolia, Virginia-Creeper	30	Yes	FACU
2. Toxicodendron radicans, Eastern Poison Ivy	25	Yes	FAC
3. Microstegium vimineum, Japanese Stilt Grass	10	No	FAC
4.			
5.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	115	x 3 =	345
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	245 (A)		795 (B)

Prevalence Index = B/A = 3.24

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

SOIL

Sampling Point: JD_UP_009

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

[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:

Photograph Log

Date: 5/14/21

Feature Name: JD_UP_009

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

Photograph Direction East

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 5/18/2021

Applicant/Owner: Dominion State: VA Sampling Point: JD_UP_011

Investigator(s): J. D'Augustine, K. Walls Section, Township, Range:

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

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.818919 Long: -75.99993 Datum: WGS84

Soil Map Unit Name: 1 - Acredale silt loam NWI classification: N/A

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:

Observed Classifications:

Cowardin: _____

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 (Five Strata) – Use scientific names of plants.

Sampling Point: JD_UP_011

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba, Northern White Oak	40	Yes	FACU
2. Carya ovata, Shag-Bark Hickory	20	Yes	FACU
3. Liquidambar styraciflua, Sweet-Gum	15	No	FAC
4. Pinus taeda, Loblolly Pine	10	No	FAC
5. Acer rubrum, Red Maple	10	No	FAC
6.			
	95	= Total Cover	
50% of total cover: 47.5	20% of total cover: 19		
Sapling Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1. Carya ovata, Shag-Bark Hickory	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	5	= Total Cover	
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	60	Yes	FACW
2. Pinus taeda, Loblolly Pine	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	40	x 3 =	120
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	165 (A)		500 (B)

Prevalence Index = B/A = 3.03

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.

Hydrophytic Vegetation Present? Yes ___ No x

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

SOIL

Sampling Point: JD_UP_011

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5YR 2/2	100%					Loam	
3-16	10YR 3/3	100%					Clay loam	
16-20	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Photograph Log

Date: 5/18/21

Feature Name: JD_UP_011

Photograph Direction North

Comments:

Photograph Direction South

Comments:

Photograph Direction East

Comments:

Photograph Direction West

Comments:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 12/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: JC_W_101_WET

Investigator(s): James Cook Section, Township, Range: N/a

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR P, MLRA 135B Lat: 36.800897 Long: -76.004191 Datum: NAD83

Soil Map Unit Name: Tomotley Loam NWI classification: N/a

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**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Wetland status was likely created or exascerbated by the presence of the easemtn. Soil was compacted with clear presense of rutting

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ 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)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ 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 X	No ____	Depth (inches): 14

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

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

Sampling Point: JC_W_101_WET

Tree Stratum (Plot size: 30)	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: 30)			
1. *Liquidambar styraciflua*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30)			
1. *Juncus effusus*	40	Yes	OBL
2. *Scirpus cyperinus*	40	Yes	OBL
3. *Solidago gigantea*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 =Total Cover		
50% of total cover: 43	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30)			
1. *Smilax rotundifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		120 (B)

Prevalence Index = B/A = 1.26

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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.

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

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

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: JC_W_101_WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size:)			
1.			
2.			
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.			
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: _____ (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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 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: JC_W_101_WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 4/1	100					Loamy/Clayey	
3-10	7.5YR 4/1	60	5YR 4/4	10	c	PL/M	Loamy/Clayey	Prominent redox concentrations
10-20	2.5Y 6/1	90	7.5YR 5/8	10	C	M	Loamy/Clayey	Spodosol

[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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ? Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ? Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ 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:

Layer 3/10 also had 7.5YR 6/1 depletions within layer (30%)

Photograph Log

Date: 12/20/21

Feature Name: JC_W_101

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region** See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Dominion CVOW City/County: Virginia Beach Sampling Date: 12/20/2021

Applicant/Owner: Dominion State: VA Sampling Point: JC_W_101_UP

Investigator(s): James Cook Section, Township, Range: N/a

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR P, MLRA 135B Lat: 36.800897 Long: -76.004191 Datum: NAD83

Soil Map Unit Name: Tomotley Loam NWI classification: N/a

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** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Pine Forest

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

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:
No apparent hydrology beyond fac-neutral test. Area is likely fringe/marginal and on the transitional line.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: JC_W_101_UP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	60	Yes	FAC
2. *Liquidambar styraciflua*	10	No	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover: 16	

Sapling Stratum (Plot size: 30)			
1. *Pinus taeda*	20	Yes	FAC
2. *Liquidambar styraciflua*	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover: 6	

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 30)			
1. *Arundinaria gigantea*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover: 6	

Woody Vine Stratum (Plot size: 30)			
1. *Smilax rotundifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover: 1	

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	115	x 3 =	345
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	145 (A)		405 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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.

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

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

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: JC_W_101_UP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size:)			
1.			
2.			
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.			
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: _____ (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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 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: JC_W_101_UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3							Peat	Duff
3-6	10YR 3/1	100					Loamy/Clayey	
6-14	10YR 7/1	100					Loamy/Clayey	Spodosol
14-20	10YR 7/1	99	2.5Y 7/3	1	c	M	Loamy/Clayey	Distinct redox concentrations

[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)
- ? Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ 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:

Photograph Log

Date: 12/20/21

Feature Name: JC_W_101 UP

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 2/15/2022

Applicant/Owner: Dominion State: VA Sampling Point: JC-W-1001

Investigator(s): J.Cook, E. Deck Section, Township, Range: N/a

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.819081 Long: -76.000968 Datum: WGS84

Soil Map Unit Name: Acredale Silt Loam NWI classification: N/a

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:
Wetland bisected by berm along the easement, largely PFO with small PEM offshoot. Entire feature mapped as PFO

Observed Classifications:
Cowardin: PFO

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- x Saturation Visible on Aerial Imagery (C9)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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 x No _____

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

Remarks:
Unable to dig to determine primary indicators, hydrology is met with secondary indicators.

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

Sampling Point: JC-W-1001

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua, Sweet-Gum	35	Yes	FAC
2. Pinus taeda, Loblolly Pine	20	Yes	FAC
3.			
4.			
5.			
6.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling Stratum (Plot size: 30 ft)			
1. Pinus taeda, Loblolly Pine	15	Yes	FAC
2. Liquidambar styraciflua, Sweet-Gum	5	Yes	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Arundinaria tecta, Switch Cane	15	Yes	FACW
2. Phragmites australis, Common Reed	15	Yes	FACW
3. Gramminoid sp	10	Yes	
4. Juncus effusus, Lamp Rush	10	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 30 ft)			
1. Lonicera japonica, Japanese Honeysuckle	4	Yes	FACU
2. Smilax laurifolia, Laurel-Leaf Greenbrier	4	Yes	FACW
3.			
4.			
5.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	34	x 2 =	68
FAC species	75	x 3 =	225
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	123 (A)		319 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

x 2 - Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? Yes x No ___

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

SOIL

Sampling Point: JC-W-1001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

Soils not currently taken due to lack of dig permit

Photograph Log

Date: 2/15/22

Feature Name: JC_W_1001

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Dominion CVOW City/County: Virginia Beach/Virginia Beach Sampling Date: 2/15/2022

Applicant/Owner: Dominion State: VA Sampling Point: JC-W-1001-Up

Investigator(s): J.Cook, E. Deck Section, Township, Range: N/a

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 6

Subregion (LRR or MLRA): MLRA 153B of LRR T Lat: 36.819105 Long: -76.000847 Datum: NAD83

Soil Map Unit Name: Acredale silt loam NWI classification: N/a

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

Are Vegetation x, 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:
Berm developed within easement, likely placed over previous wetland but unable to confirm. Largely mowed with difficult vegetation ID.

Observed Classifications:
Cowardin: Upland

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)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along 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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

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:
No apparent hydrology (unable to dig to confirm)

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

Sampling Point: JC-W-1001-U

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft)			
1. Gramminoid sp	30	Yes	
2. Festuca rubra, Red Fescue	25	Yes	FACU
3. Juncus effusus, Lamp Rush	15	No	OBL
4. Cirsium arvense, Canadian Thistle	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	50 (A)		155 (B)

Prevalence Index = B/A = 3.10

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.

Hydrophytic Vegetation Present? Yes ____ No x

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

Heavily mowed and unable to id grass species

SOIL

Sampling Point: JC-W-1001-Up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[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:

No dig permit, unable to determine soils.

Photograph Log

Date: 2/15/22

Feature Name: JC-W-1001 UP

Photograph Direction North

Comments:

Photograph Direction East

Comments:

Photograph Direction South

Comments:

Photograph Direction West

Comments: