

Supplemental Wetland Reports



Oyster Creek



# **Ocean Wind - Oyster Creek**

# Supplemental Wetland and Watercourse Delineation Report

*Oyster Creek Export Cable Route Alternatives- Block 97, Lot 4; Block 97, Lot 3; Block 41, Lot 40.02; Block 41, Lot 2; Block 141, Lot 4.02; Block 99, Lot 3; Lighthouse Drive road ROW* 



## **Document Version**

File Name	Preparer	Editor	Checker	Accepter	Approver
OCW01_Oyster Creek Delineation Report_2022_05_10	SK, DH	JH	LW		



# **Table of Contents**

1.	Project Description	.4
2.	Methods	6
2.1	Desktop Review	.6
2.2	Field Survey	.6
3.	Results	.6
3.1	Desktop Review	.6
3.2	Wetland Delineation Field Survey	3
3.3	Watercourse Delineation Field Survey	8
3.4	Wildlife	8
3.5	Species-Specific Assessment	20
4.	Literature Cited	21

#### List of Tables

Table 3.1-1. Soil Map Units within the Wetland Review Area	8
Table 3.2-1. Summary of Wetland Delineation Field Survey Results	16
Table 3.3-1. Summary of Watercourse Delineation Field Survey Results	18
Table 3.4-1. Bird species identified in OC SWRA	19
Table 3.5-1. NJDEP Natural Heritage Program and USFWS IPaC Mapper search results for Federal and St	tate
endangered and threatened species with potential to occur within the OC SWRA	20
List of Figures	
Figure 2.1-1 Project Overview	5
Figure 3.1-1 NJDEP Watershed Management Areas Map	9
Figure 3.1-2 NJDEP Wetlands Map – OC SWRA	10
Figure 3.1-3 NWI Wetlands Map - OC SWRA	11
Figure 3.1-4 FEMA PFIRM Flood Hazard Area Map – OC SWRA	12
Figure 3.2-1 Field Survey Wetland Delineation Map – OC SWRA	17

#### List of Appendices

Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report

Attachment B. Site Photographs

Attachment C. Wetland Delineation Datasheets

# Ocean Wind

#### 1. **Project Description**

Ocean Wind LLC (Ocean Wind), a subsidiary of Ørsted Wind Power North America LLC (Ørsted) [formerly Dong Energy Wind Power (U.S.) Inc.] is developing the Ocean Wind Offshore Wind Farm Project (OCW01) pursuant to the Bureau of Ocean Energy Management (BOEM) requirements for the commercial lease of submerged lands for renewable energy development on the outer continental shelf (Lease Area OCS-A-0498). Ocean Wind intends to develop, build, operate, and own (through one or more affiliated special purpose entities) a utility-scale offshore wind farm located approximately 15 miles off the coast of New Jersey within the OCS-A 0498 Lease area (the "Project") (Figure 2.1-1).

As a part of Project development, Ocean Wind is looking to best utilize the available points of interconnection to the onshore grid. One point of interconnection is "Oyster Creek" which includes the Oyster Creek Generating Station (OCGS), where the proposed Onshore Substation is located. Ocean Wind 1 planned to make landfall at a property north of Oyster Creek (the Holtec property) and site the cable largely within that property from landfall to the proposed substation. However, it became necessary to consider additional alternatives. To support the evaluation of alternative landfalls and onshore export cable routes, a wetland/watercourse delineation and ecological community assessment was completed within the Oyster Creek Supplemental Wetland Review Area in 2022 (OC SWRA).

The OC SWRA encompasses an area in Ocean Township and Lacey Township in Ocean County, NJ (Figure 2.1-1). The OC SWRA includes road ROWs and parcels associated with the proposed alternative export cable routes and landfall locations. Public and private access roads with SWRA along the alternative ECR routes include Bay Parkway and Lighthouse Drive, in Ocean Township as well as private paved roads at the JGS Waretown property (Block 41, Lot 40.02) and an Ocean Township parcel (Block 41, Lot 2). Landfall parcels include the Nautilus landfall at 6 and 8 Pirate Drive (Block 97, Lots 3 and 4), the Holiday Beach Club parcel at the Lighthouse drive landfall (Block 99, Lot 3) and the marina landfall (Block 141, Lot 4.02) (Figure 2.1-1).





Figure 2.1-1 Project Overview



#### 2. Methods

HDR Engineering, Inc. (HDR) delineated the boundaries of wetlands and watercourses within the OC SWRA in two phases, Desktop Review and Field Survey, as described below.

#### 2.1 Desktop Review

Prior to conducting the wetland and watercourse delineation, relevant materials were reviewed and are included as attachments for reference:

- NJDEP Watershed Management Area Map
- New Jersey State Department of Environmental Protection (NJDEP) Wetlands Map
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map
- U.S. Department of Agriculture (USDA) Natural Resources Conservation (NRCS) Web Soil Survey (WSS) Custom Soil Resource Report (Attachment A)
- Federal Emergency Management Agency (FEMA) 2013 Preliminary Working Data Flood Insurance Rate Maps (FIRM)

#### 2.2 Field Survey

On May 5 and 6, 2022, the boundaries of the wetlands and watercourses within select parcels of the Oyster Creek onshore export cable route were delineated (Block 41, Lot 2; Block 41, Lot 40.02; Block 97, Lot 4; Block 97, Lot 3). On June 1, 2022, the boundaries of wetlands and watercourses within Block 141, Lot 4.02 were delineated and the wetlands within the Lighthouse Drive road right-of-way were assessed (Figure 3.2-1). On July 6, 2022, wetlands within the Holiday Beach Club (Block 99, Lot 3) were delineated.

All delineations used the three-parameter methodology described in the 1987 United States Army Corps of Engineers (USACE) wetland delineation manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic and Gulf Coastal Plain Region (USACE 2010). The lines were walked and verified based on the three-parameter approach (soils, vegetation, and hydrology) described in the 1989 Federal Interagency Manual. Upland and wetland observation points were recorded for each delineated wetland. Watercourses were delineated using the indicators of the ordinary high-water mark as described in Regulatory Guidance Letter 05-05 (USACE 2005). Mapped wetland observation locations were surveyed at the time of delineation by a New Jersey licensed professional land surveyor. Photographs of the site, wetland observation soil pits, and vegetation were taken and are included in **Attachment B**. Wetland delineation data sheets are included in **Attachment C**.

#### 3. Results

#### 3.1 Desktop Review

The OC SWRA is within the NJDEP Barnegat Bay Watershed Management Area (WMA-13) (Figure 3.1-1). The Barnegat Bay Watershed covers over 600 square miles, its characteristics varying from coastal dunes and marshes to developed lands. An array of environmentally sensitive habitats exists here, such as sand beaches, bay islands, submerged aquatic vegetation, finfish nursery areas, shellfish beds, and waterfowl nesting grounds.

The OC SWRA crosses Oyster Creek and associated wetlands west of Route 9. According to the NJDEP's Surface Quality Standards (N.J.A.C. 7:9B, adopted amendments N.J.A.C. 7:9B-1.15), Oyster Creek is

classified as FW2-NT/SE1 waters. Designated uses for this classification include maintenance, migration and propagation of the natural and established biota, primary contact recreation, industrial and agricultural water supply, public potable water supply after conventional filtration treatment, migration of diadromous fish, and secondary contact recreation.

The OC SWRA contains wooded wetlands (mixed, coniferous, Atlantic white cedar), disturbed tidal wetlands, and *Phragmites* dominated coastal wetlands based on the NJ Geoweb NJDEP Wetlands Land Use/Land Cover 2012 Update Layer (Figure 3.1-2).

The USFWS NWI map classifies wetlands within the OC SWRA on the western side of Route 9 as freshwater forested/shrub wetlands (PFO4/1C, PFO4Eg, PFO4Cg, PFO1B) and freshwater emergent wetlands (PEM1Fh). The USFWS NWI map classifies wetlands within the OC SWRA on the eastern side of Route 9 as estuarine and marine wetlands (E2EM1P, E2EM5Pd) (Figure 3.1-3).

The USDA WSS report indicates the majority of soil map units within the OC SWRA are classified as Lakehurst sand, Berryland sand, Manahawkin muck, and Psammaquents (**Attachment A**). Lesser amounts of mapped soils include Appoquinimink-Transquaking Mispillion complex, Atsion sand, Pits, Psamments, Herring Creek mucky silt loam, Trappe sand, and Truitt-Southpoint complex. Lakehurst sand soils are non-hydric, moderately well drained, and found on flats and dunes. Berryland sand soils are hydric soils, very poorly drained, and are found in flats, depressions, and drainageways. Manahawkin muck soils are frequently flooded, hydric, and found in swamps and floodplains. These soils are typical of freshwater channels adjacent to tide water. Psammaquents are frequently flooded, hydric, very poorly drained, and found on flat landforms. The acreage, percent composition, soil series, and hydric rating for soil map units are presented in Table 3.1-1. A U.S. Department of Agriculture Custom Soil Resource Report is provided in **Attachment A**.

FEMA floodplain maps (FEMA 2015 Preliminary Work Map Data) showed that the OC SWRA near Oyster Creek and Barnegat Bay is within Special Flood Hazard Area Zones AE (1% Annual Chance Flood Hazard) and X (0.2% Annual Chance Flood Hazard). Most of the proposed OC SWRA is within Special Flood Hazard Area Zone X (Area of minimal flood hazard). Figure 3.1-4 illustrates the extents of the FEMA PFIRM flood hazard zones.

Map Unit Symbol	Map Unit Name	Percent of Site	Soil Series Component	% Component	Hydric Rating
	Lakeburgt gand 0 to 5		Lakehurst and similar soils	85%	No
LakB percent slopes		41.1%	Minor components	15%	Yes/ No
PstAt	Psamments, 0 to 2	Amments, 0 to 2 18.3% Psammaquents, sulfidic substratum, frequently flooded, and similar soils		85%	Yes
	percent slopes		Minor components	15%	Yes
BerAr	Berryland sand, 0 to 2 percent slopes, rarely	14.3%	Berryland, rarely flooded, and similar soils	85%	Yes
-	flooded		Minor components	15%	Yes
MakAt	Manahawkin muck, 0 to 2 percent slopes,	10.5%	Manahawkin, frequently flooded, and similar soils	85%	Yes
	frequently flooded		Minor components	15%	Yes
	Appoquinimink-		Appoquinimink, very frequently flooded, and similar soils	40%	Yes
AptAv	Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded	4.4%	Transquaking, very frequently flooded, and similar soils	30%	Yes
			Mispillion, very frequently flooded, and similar soils	25%	Yes
			Minor components	5%	No
Ate A O	Atsion sand, 0 to 2	A 1%	90%	Yes	
A13A0	Tidewater Area		Minor components	10%	Yes/ No
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water	3.0%	Herring creek, 0 to 1 meter853.0%water depth, and similar soils	85%	Yes
	depth		Minor components	15%	Yes
PssA	Psamments, 0 to 2	2.3%	Psamments, nearly level, and similar soils	85%	No
	percent slopes		Minor components	15%	Yes
WDC4	Dredge Channel, 1 to 4 meter water depth	1.1%	Water, dredge channel	100%	Yes
Water	Water	0.5%	Water	100%	N/A
PHG	Pits, sand and gravel	0.4%	Pits, sand and gravel	100%	No
	Truitt-Southpoint		Truitt, 1 to 2 meter water depth, and similar soils	40%	Yes
WTs2	complex, 1 to 2 meter water depth	0.1%	Southpoint, 1 to 2 meter water depth, and similar soils	35%	Yes
			Minor components	25%	Yes
	Totals for Site	100.0%			

#### Table 3.1-1. Soil Map Units within the Wetland Review Area





Figure 3.1-1 NJDEP Watershed Management Areas Map





Figure 3.1-2 NJDEP Wetlands Map – OC SWRA





Figure 3.1-3 NWI Wetlands Map – OC SWRA





Figure 3.1-4 FEMA PFIRM Flood Hazard Area Map – OC SWRA

#### 3.2 Wetland Delineation Field Survey

Three palustrine forested wetlands, one estuarine/ marine wetland, and one palustrine and estuarine/marine wetland complex were delineated within the OC SWRA, comprising an area of 5.57 acres. The delineated wetlands are shown in Figure 3.2-1. Wetland delineation data sheets for upland and wetland observation points are included in **Attachment C**. These wetlands are described in detail below.

<u>Wetland A</u> – The area delineated as Wetland A is a 0.03-acre estuarine/ marine wetland within the workspace for the Nautilus landfall. Wetland A is bounded to the west by a disturbed upland area along Pirate Drive, to the north by Nautilus Road, to the south by a bulkhead and upland vegetation, and to the east by a berm separating it from Barnegat Bay. Wetland A is not identified as a wetland by NWI. Dominant species in the wetland area include groundseltree (*Baccharis halimifolia*) FAC, seaside goldenrod (*Solidago sempervirens*) FACW, and saltmeadow cordgrass (*Spartina patens*) FACW. These dominant species are all indicative of wetland vegetation based on the dominance test and the prevalence index. Soils in Wetland A are indicative of hydric soils due to the presence of sandy redox (S5). Hydrology indicators include a high water table (10 inches below surface) and saturation (3 inches below surface). A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland A. No hydrophytic vegetation, hydric soil, or hydrology indicators were present. The dominant species within the upland area is American beachgrass (*Ammophila breviligulata*) UPL. Although saturation was present 16 inches below the surface, hydrology indicators were not present.

<u>Wetland B</u> – The area delineated as Wetland B is a 0.59-acre freshwater forested broad-leaved deciduous wetland based on Cowardin et al. (1979), located within the JGS Waretown parcel west of Route 9. Wetland B is bounded to the east by upland forest and commercial property, to the south by a gravel access road, to the north by a paved access road, and to the west by a storage area for landscaping material. Wetland B receives inflow from Watercourse A. Wetland B is identified as "PF01B" (Palustrine Forested, Broad-Leaved Deciduous Vegetation, Seasonally Saturated) by NWI and a mixed wooded wetland (deciduous dominated) by NJDEP 2012 Land Use/Land Cover mapping. Dominant species found during survey include red maple (*Acer rubrum*) FAC, pitch pine (*Pinus rigida*) FACU, catbrier (*Smilax bona-nox*) FAC, tussock sedge (*Carex stricta*) OBL, and common reed (*Phragmites australis*) FACW. These dominant species are all indicative of wetland vegetation based on the dominance test and the prevalence index. Soils in Wetland B are indicative of hydric soils due to the presence of sandy redox (S5). Hydrology indicators include a high water table (3 inches below surface), saturation at the surface, water marks, and water-stained leaves. A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland B. No hydrophytic vegetation, hydric soil, or hydrology indicators were observed. Dominant species within the upland area included pitch pine (*Pinus rigida*) FACU, northern bayberry (*Morella pennsylvanica*) FACU, and Virginia creeper (*Parthenocissus quinquefolia*) FACU.

<u>Wetland C</u> – Wetland C is located within the Ocean Township parcel west of Route 9 and abuts a paved access road to the east that runs through the property and bisects Wetland C from Wetland D. The area delineated as Wetland C is part of a large wetland system associated with Oyster Creek Tributary in the northern portion of the wetland. The area delineated as Wetland C is 3.32 acres. Wetland C is a palustrine forested wetland based on Cowardin et al. (1979). Wetland C is classified as "PFO4Eg" (Palustrine, Forested, Needle-Leaved Evergreen, Seasonally Flooded/ Saturated, Organic soil) and "PFO4/1C" (Palustrine, Forested, Needle-Leaved Evergreen/ Broad-leaved Deciduous, Seasonally Flooded) by NWI. NJDEP 2012 Land

Use/Land Cover mapping depicts Wetland C as coniferous wooded wetlands to the south, and mixed wooded wetlands (Coniferous dominated) to the north. Wetland C is dominated by red maple (*Acer rubrum*) FAC, pitch pine (*Pinus rigida*) FACU, sweet pepperbush (*Clethra alnifolia*) FACW, and inkberry (*Ilex glabra*) FACW. These dominant species are all indicative of wetland vegetation based on the dominance test and the prevalence index. Soils in the wetland are indicative of hydric soils due to the presence of hydrogen sulfide odors (A4). Hydrology indicators include a high water table (10 inches below surface), saturation (4 inches below surface), water marks, and water-stained leaves. A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland C. No hydric soil or hydrology indicators were observed. Dominant species within the upland area included red maple (*Acer rubrum*) FAC, Atlantic white cedar (*Chamaecyparis thyoides*) OBL, sweet pepperbush (*Clethra alnifolia*) FACW, catbrier (*Smilax bona-nox*) FAC, and Virginia creeper (*Parthenocissus quinquefolia*) FACU. Based on the dominance test, hydrophytic vegetation is present.

<u>Wetland D</u> – The area delineated as Wetland D is 0.85 acres and is located within the Ocean Township parcel west of Route 9. Wetland D is a palustrine forested wetland based on Cowardin et al. (1979). Wetland D is identified as "PFO4Cg" (Palustrine, Forested, Needle-Leaved Evergreen, Seasonally Flooded, Organic soil) by NWI. NJDEP 2012 Land Use/Land Cover mapping depicts Wetland D as predominantly Atlantic white cedar wetlands, coniferous wooded wetlands to the south, and mixed shrib/scrub wetlands (deciduous ominated) to the north. Wetland D is dominated by Atlantic white cedar (*Chamaecyparis thyoides*) OBL, pitch pine (*Pinus rigida*) FACU, inkberry (*Ilex glabra*) FACW, sweet pepperbush (*Clethra alnifolia*) FACW, Solomon's seal (*Polygonatum biflorum*) FACU, and tussock sedge (*Carex stricta*) OBL. These dominant species are all indicative of wetland vegetation based on the dominance test and the prevalence index. Soils in Wetland D are indicative of hydric soils due to the hydrogen sulfide (A4) and muck presence (A8). Hydrology indicators include a high water table (1 inch below surface), saturation at surface, and water stained leaves. A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland D. No hydric soil or hydrology indicators were observed. Dominant species within the upland area include Atlantic white cedar (*Chamaecyparis thyoides*) OBL, pitch pine (*Pinus rigida*) FACU, sweet pepperbush (*Clethra alnifolia*) FACW, and partridgeberry (*Mitchella repens*) FACU. Based on the dominance test, hydrophytic vegetation is present.

<u>Wetland E</u> – Wetland E is located along the southern border of a marina property proposed as the marina landfall, is bordered by Barnegat Bay to the east, Fresh Creek to the south, and a large wetland system abutting residential properties to the west. The wetlands area delineated as Wetland E is 0.66 acres. Wetland E is classified as "E2EM1P" (Estuarine Intertidal Emergent Persistent Irregularly Flooded) and "E2EM5Pd" (Estuarine Intertidal Emergent Persistent Irregularly Flooded) and "E2EM5Pd" (Estuarine Intertidal Emergent *Phragmites australis* Irregularly Flooded Partially Drained/ Ditched) by NWI. NJDEP 2012 Land Use/Land Cover mapping depicts Wetland E as Phragmites dominated coastal wetlands, disturbed tidal wetlands, and mixed wooded wetlands (deciduous dominated). Wetland E is dominated by black gum (*Nyssa sylvatica*) FAC, northern bayberry (*Morella pensylvanica*) FAC, hedge bindweed (*Calystegia sepium*) FAC, and common reed (*Phragmites australis*) FACW. These dominant species are all indicative of wetland vegetation based on the dominance test and the prevalence index. Soils in Wetland E are indicative of hydric soils due to hydrogen sulfide (A4) and sandy gleyed matrix (S4). Hydrology indicators include a high water table (15 inches below surface), saturation at surface, and drift deposits. A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland E. No hydric soils, vegetation, or hydrology indicators were observed. Dominant species within the upland area include pitch pine (*Pinus rigida*)



FACU, white oak (*Quercus alba*) FACU, black gum (*Nyssa sylvatica*) FAC, high bush blueberry (*Vaccinium corymbosum*) FACW, and greenbrier (*Smilax rotundifolia*) FAC.

<u>Wetland F</u> – The area delineated as Wetland F is 0.12 and is located along the southern boundary of the Holiday Beach Club property at the Lighthouse Drive landfall. Wetland F is bounded by Admiral Way and residential property to the south, Shore Drive to the west, and developed commercial property to the north and east. Wetland F has not been identified by NWI or NJDEP Land Use/Land Cover mapping. The dominant vegetation is common reed (*Phragmites australis*) FACW. This dominant species is indicative of wetland vegetation based on the dominance test and prevalence index. Soils in Wetland F are indicative of hydric soils due to a depleted matrix (F3). Hydrology indicators include saturation (12 inches below surface). A summary of wetland indicators is provided in Table 3.2-1.

Data was collected at an upland observation point outside of Wetland F. No hydric soils, vegetation, or hydrology indicators were observed. The upland area was open sand adjacent to a picnic area and playground, therefore no vegetation was observed.

<u>Lighthouse Drive</u> – The 0.001-acre wetland located on Lighthouse Drive perpendicular to Nautilus Road is within the Lighthouse Drive road ROW. It is bordered by Lighthouse Drive to the north, residential properties to the east and south, and a utility property to the west. The wetland has not been identified by NWI or NJDEP Land Use/Land Cover mapping. The dominant vegetation is common reed (Phragmites australis) FACW. This dominant species is indicative of wetland vegetation based on the dominance test and prevalence index. Soils in the Lighthouse Drive wetland hydric due to the presence of histosol (A1) and hydrogen sulfide (A4) indicators. Hydrology indicators include surface water (0.5 to 2 inches below surface), a high water table (6 inches below surface), saturation, and water stained leaves. A summary of wetland indicators is provided in Table 3.2-1.



Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres)	Cowardin Classificat <u>ion</u>
Wetland A	High water table (A2), saturation (A3)	Baccharis halimifolia (FAC), Solidago sempervirens (FACW), Spartina patens (FACW)	Sandy redox (S5)	0.03	None
Wetland B	High water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9)	Acer rubrum (FAC), Pinus rigida (FACU), Smilax bona-nox (FAC), Carex stricta (OBL), Phragmites australis (FACW)	Sandy redox (S5)	0.59	PF01B
Wetland C	High water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9)	Acer rubrum (FAC), Pinus rigida (FACU), Clethra alnifolia (FACW), Ilex glabra (FACW)	Hydrogen sulfide (A4)	3.32	PFO4Eg PFO4/1C
Wetland D	High water table (A2), saturation (A3), water-stained leaves (B9)	Chamaecyparis thyoides (OBL), Pinus rigida (FACU), Ilex glabra (FACW), Clethra alnifolia (FACW), Polygonatum biflorum (FACU), Carex stricta (OBL)	Hydrogen sulfide (A4), Muck presence (A8)	0.85	PFO4Cg
Wetland E	High water table (A2), Saturation (A3), Drift deposits (B3)	Nyssa sylvatica (FAC), Morella pensylvanica (FAC), Calystegia sepium (FAC), Phragmites australis (FACW)	Hydrogen sulfide (A4), Sandy gleyed matrix (S4)	0.66	E2EM1P E2EM5Pd
Wetland F	Saturation (A3)	Phragmites australis (FACW)	Depleted matrix (F3)	0.12	None
Lighthouse Drive	High water table (A2), saturation (A3), water-stained leaves (B9)	Phragmites australis (FACW)	Histosol (A1), Hydrogen sulfide (A4)	0.001	None
			Total	5.57	

#### Table 3.2-1. Summary of Wetland Delineation Field Survey Results





PATH: IMAHPI-FILE01/ACTIVEPROJECTS1099391100920787.0\_GIS\_MODELS7.2\_WORK\_IN\_PROGRESSMAP\_DOCSIDRAFTWETLANDDELINEATION/REPORTFIGURES2022\_REPORTFIGURESALTIOCW01\_OC\_WETLAND\_RPT\_SURVEYEDWETLANDS\_PSEG\_20220711\_ALT.MXD - USE: FBRILHAN - DATE: 71/82022

Figure 3.2-1 Field Survey Wetland Delineation Map – OC SWRA

#### 3.3 Watercourse Delineation Field Survey

Two watercourses were delineated during the field surveys. The locations of these features are provided in Figure 3.2-1 and the length and area of each watercourse is provided in Table 3.3-1. Watercourse A is a manmade feature with culverts to facilitate flow through commercial property. It is approximately 16 feet in width. Watercourse A is not identified by NWI. Based on review of aerial photography, this watercourse drains west, through wetlands, to Oyster Creek tributary. Oyster Creek Tributary is located at the edge of the Block 41, Lot 2. The stream is approximately 29 feet in width and approximately 2-3 feet deep. During the field survey there was a swift flow to the northeast toward Oyster Creek Channel. The stream was delineated from the northeastern edge of Block 41, Lot 2 to approximately 800 feet downstream. Watercourse B is identified as "R5UBH" (Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded) by NWI. Portions of Watercourses A and B are outside of the OC SWRA. Totals in Table 3.3-1 below include areas within the OC SWRA.

Watercourse	Length (linear ft.)	Area (sq ft)	Abutting Wetland
Watercourse A	360	5,802	В
Oyster Creek Tributary (Watercourse B)	810	23,563	С
Totals for Site	1,170	29,365	

#### Table 3.3-1. Summary of Watercourse Delineation Field Survey Results

#### 3.4 Wildlife

While no species-specific wildlife studies were conducted, all wildlife observations made in association with the wetland delineations and ecological community mapping field studies were recorded. Birds were identified by song and/or direct observation, mammals were identified by indicator signs such as scat, and reptiles were identified by direct observation.

Fish - No fish were observed at the time of the site survey.

Amphibians - No amphibians were observed at the time of the site survey.

**Reptiles** – One eastern fence lizard (*Sceloporus undulated*) was observed in Wetland B on May 5, 2022. Two rough green snakes (*Opheodrys aestivus*) were observed near Wetland C on May 5, 2022. One female box turtle (*Terrapene carolina*) was observed in Wetland E on June 1, 2022.

*Birds* – A total of 33 species of birds were observed during the site surveys. Observations are listed below in Table 3.4-1

*Mammals* – White tailed deer and coyote scat was observed at the time of the site survey. However, no individuals were directly observed at the time of the site survey.

#### Table 3.4-1. Bird species identified in OC SWRA

Species Common	Species Scientific
Ovenbird	Seiurus aurocapilla
Eastern towhee	Pipilo erythrophthalmus
Blue jay	Cyanocitta cristata
Field sparrow	Spizella pusilla
Canada goose	Branta canadensis
Northern cardinal	Cardinalis cardinalis
Turkey vulture	Cathartes aura
Black capped chickadee	Poecile atricapillus
Tufted titmouse	Baeolophus bicolor
Common yellowthroat	Geothlypis trichas
Common crow	Corvus brachyrhynchos
Gray catbird	Dumetella carolinensis
Black-throated blue warbler	Setophaga caerulescens
American robin	Turdus migratorius
Prairie warbler	Setophaga discolor
Eastern phoebe	Sayornis phoebe
American goldfinch	Spinus tristis
Fish crow	Corvus ossifragus
Mallard	Anas platyrhynchos
Northern mockingbird	Mimus polyglottos
House finch	Haemorhous mexicanus
Song sparrow	Melospiza melodia
Purple martin	Progne subis
Red winged blackbird	Agelaius phoeniceus
Great black-backed gull	Larus marinus
Laughing gull	Leucophaeus atricilla
Eastern starling	Sturnus vulgaris
Willet	Tringa semipalmata
Mourning dove	Zenaida macroura
Grackle	Quiscalus quiscula
Snowy egret	Egretta thula
Green heron	Butorides virescens
Caspian Tern	Hydroprogne caspia
Killdeer	Charadrius vociferus
House sparrow	Passer domesticus
Mute swan	Cygnus olor
Semipalmated plover	Charadrius semipalmatus
Common tern	Sterna hirundo
Herring gull	Larus argentatus
Rock pigeon	Columba livia
Barn swallow	Hirundo rustica
Glossy Ibis	Plegadis falcinellus

# Ocean Wind

#### 3.5 Species-Specific Assessment

A database search with the NJDEP Natural Heritage Program and the USFWS IPaC Mapper indicated four state-listed avian species, one state listed mammal, four state-listed reptile species, one state-listed amphibian species, and seven vascular plant species as potentially occurring on or within 1.5 miles of the OC SWRA (**Table 3.5-1**). Special concern species are not included in the table. The publication "Endangered and Threatened Wildlife of New Jersey" (Beans and Niles; 2003) and species dossiers on NJDEP's website were used as a reference for the field work and assessment. Species that were directly observed in the OC SWRA or require habitat specific surveys are discussed in further detail below.

Table 3.5-1. NJDEP Natural Heritage Program and USFWS IPaC Mapper search results for Federal and
State endangered and threatened species with potential to occur within the OC SWRA

Species Common	ommon Species Scientific		Federal Status		
Mammals					
Northern Long-eared Bat	Myotis septentrionalis	E	Т		
	Birds				
Bald eagle	Haliaeetus leucocephalus	E	-		
Barred owl	Strix varia	Т	-		
Eastern black rail	Laterallus jamaicensis	E	Т		
Piping plover	Charadrius melodus	E	Т		
Osprey	Pandion haliaetus	Т	-		
Black-crowned night heron	Nycticorax nycticorax	Т	-		
Black Skimmer	Rynchops niger	E	-		
Grasshopper sparrow	Ammodramus savannarum	Т	-		
Red knot Calidris canutus rufa		E	Т		
Reptiles					
Northern pine snake	Pituophis melanoleucus melanoleucus	Т	-		
	Amphibians				
Pine barrens treefrog	Hyla andersonii	Т	-		
	Vascular Plants				
New Jersey Rush	Juncus caesariensis	Е	-		
Bog Asphodel	Narthecium americanum	E	-		
Knieskern's Beaked-rush	Rhynchospora knieskernii	E	-		
American Chaffseed	Schwalbea americana	E	E		
Swamp Pink	Helonia bullata	E	Т		

Status: T - Threatened, E - Endangered

**Bald Eagle** is listed as an endangered species in New Jersey. No bald eagles were observed during the site investigation. The bald eagle inhabits areas of forest associated with large perch trees near a body of water (Beans and Niles 2003). Foraging opportunities occur in the WRA near Barnegat Bay and Oyster Creek. Based on discussions with NJDEP, a bald eagle nest is located near the marina landfall. Ocean Wind 1 is coordinating with NJDEP to determine the location of the nest in relation to the workspace.

**Swamp Pink** is listed as a federally threatened species and as an endangered species in New Jersey. The wetland delineation was conducted by field personnel with experience in identifying rare plants such as swamp pink. No specimens of swamp pink nor suitable habitat was observed on the site. While several of the sympatric species (red maple, sweet pepperbush, sphagnum moss) are present, suitable habitat is very limited and the wetland hummocks/microtopographic relief cited in the USFWS dossier is limited on the site.

#### 4. Literature Cited

- Beans, B.E., and Niles, L. (2003). *Endangered and Threatened Wildlife of New Jersey*. Rutgers University Press. P. 1-300.
- Conserve Wildlife Foundation of New Jersey. (2019). *New Jersey endangered and threatened species field guide: Eastern box turtle.* Accessed July 31, 2019 at www.conservewildlife nj.org/species/fieldguide/.
- Cowardin, L.M., Carter, V., Golet, F.C. and LaRoe, E.T. (1979). *Classification of Wetland and Deepwater Habitats of the United States.* Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.
- Environmental Laboratory. (1987). Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Jersey Central Power & Light Company, (JCP&L) (1972). Oyster Creek Nuclear Generating Station Environmental Report. Jersey Central Power & Light Company, 300 Madison Ave. Morristown, NJ 07960.
- New Jersey Department of Environmental Protection (NJDEP). (n.d.). *Pine Barrens Treefrog Fact Sheet.* Accessed June 16, 2022 at <u>https://www.nj.gov/dep/fgw/ensp/pdf/end-thrtened/pbtreefrog.pdf</u>
- New Jersey Department of Environmental Protection (NJDEP). (n.d.). *Northern Harrier Fact Sheet.* Accessed June 16, 2022 at <u>https://www.nj.gov/dep/fgw/ensp/pdf/end-thrtened/harrier.pdf</u>
- The National Wildlife Federation (NWF). (2022). *Eastern Fence Lizard*. Accessed May 19, 2022 at <u>Eastern Fence</u> <u>Lizard | National Wildlife Federation (nwf.org)</u>.
- United States Department of Agriculture (USDA): Natural Resources Conservation Service. (2015). *Web Soil Survey*. Retrieved from United States Department of Agriculture, Natural Resources Conservation Service: <u>http://websoilsurvey.nrcs.usda.gov/. Accessed 8 June 2021.</u>
- U.S. Army Corps of Engineers (USACE). (2005). *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification.* Don T. Riley, Major General, US Army, Director of Civil Works.
- U.S. Army Corps of Engineers. (2010). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble, ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center.



### Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report



United States Department of Agriculture

Natural Resources Conservation

Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Ocean County, New Jersey



# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2\_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map	9
Legend	.10
Map Unit Legend	11
Map Unit Descriptions	.11
Ocean County, New Jersey	14
AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1	
percent slopes, very frequently flooded	14
AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	.16
BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded	17
LakB—Lakehurst sand, 0 to 5 percent slopes	.19
MakAt—Manahawkin muck, 0 to 2 percent slopes, frequently flooded	.20
PHG—Pits, sand and gravel	22
PssA—Psamments, 0 to 2 percent slopes	.22
PstAt—Psammaquents, sulfidic substratum, 0 to 2 percent slopes,	
frequently flooded	24
WATER—Water	.25
WDC4—Dredge Channel, 1 to 4 meter water depth	26
WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth	.26
WTs2—Truitt-Southpoint complex, 1 to 2 meter water depth	.28
References	.31

# **How Soil Surveys Are Made**

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

#### Custom Soil Resource Report Soil Map



	MAP L	EGEND		MAP INFORMATION
Area of In	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils	Soil Map Unit Polygons Soil Map Unit Lines	© ∀	Very Stony Spot Wet Spot	Please rely on the bar scale on each map sheet for map measurements.
Special	Soil Map Unit Points Point Features		Other Special Line Features	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
9 2	Blowout Borrow Pit	Water Fea	tures Streams and Canals ation	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the
* \ 	Closed Depression Gravel Pit	~	Rails Interstate Highways	Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
: ©	Gravelly Spot Landfill	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Major Roads	Soil Survey Area: Ocean County, New Jersey
.A مله	Lava Flow Marsh or swamp	Backgrou	nd Aerial Photography	Survey Area Data: Version 19, Aug 31, 2021 Soil map units are labeled (as space allows) for map scales
* 0 0	Mine or Quarry Miscellaneous Water Perennial Water			1:50,000 or larger. Date(s) aerial images were photographed: Apr 13, 2021—Sep 14, 2021
~ +	Rock Outcrop Saline Spot			The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor
**	Sandy Spot Severely Eroded Spot			shifting of map unit boundaries may be evident.
s S	Slide or Slip Sodic Spot			

### **Map Unit Legend**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AptAv	Appoquinimink-Transquaking- Mispillion complex, 0 to 1 percent slopes, very frequently flooded	43.8	4.4%
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	40.1	4.1%
BerAr	Berryland sand, 0 to 2 percent slopes, rarely flooded	140.9	14.3%
LakB	Lakehurst sand, 0 to 5 percent slopes	406.5	41.1%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	103.5	10.5%
PHG	Pits, sand and gravel	4.3	0.4%
PssA	Psamments, 0 to 2 percent slopes	22.4	2.3%
PstAt	Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded	180.8	18.3%
WATER	Water	4.7	0.5%
WDC4	Dredge Channel, 1 to 4 meter water depth	11.1	1.1%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	29.4	3.0%
WTs2	Truitt-Southpoint complex, 1 to 2 meter water depth	1.2	0.1%
Totals for Area of Interest		988.7	100.0%

# **Map Unit Descriptions**

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.
An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## **Ocean County, New Jersey**

# AptAv—Appoquinimink-Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently flooded

### **Map Unit Setting**

National map unit symbol: vk14 Elevation: 0 to 120 feet Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F Frost-free period: 161 to 231 days Farmland classification: Farmland of unique importance

#### **Map Unit Composition**

Appoquinimink, very frequently flooded, and similar soils: 40 percent Transquaking, very frequently flooded, and similar soils: 30 percent Mispillion, very frequently flooded, and similar soils: 25 percent Minor components: 5 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Appoquinimink, Very Frequently Flooded

#### Setting

Landform: Tidal marshes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Concave Parent material: Loamy fluviomarine deposits over herbaceous organic material

## **Typical profile**

Ag - 0 to 12 inches: mucky silt loam Cg - 12 to 30 inches: silt loam Oe - 30 to 80 inches: mucky peat

## **Properties and qualities**

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: Frequent
Maximum salinity: Strongly saline (16.0 to 32.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.7 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8w Hydrologic Soil Group: B/D Hydric soil rating: Yes

#### **Description of Transquaking, Very Frequently Flooded**

#### Setting

Landform: Tidal marshes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip Down-slope shape: Linear Across-slope shape: Linear Parent material: Herbaceous organic material over loamy

#### **Typical profile**

Oe - 0 to 14 inches: mucky peat

- Oa 14 to 60 inches: muck
- Cg 60 to 90 inches: silty clay

#### Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: Frequent
Maximum salinity: Moderately saline to strongly saline (8.0 to 32.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 26.9 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8w Hydrologic Soil Group: B/D Hydric soil rating: Yes

#### **Description of Mispillion, Very Frequently Flooded**

#### Setting

Landform: Tidal marshes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Concave Parent material: Herbaceous organic material over loamy marine deposits and/or loamy fluviomarine deposits

#### **Typical profile**

Oe - 0 to 10 inches: mucky peat

- Oa 10 to 26 inches: muck
- Cg 26 to 90 inches: silt loam

#### **Properties and qualities**

Slope: 0 to 1 percent Depth to restrictive feature: More than 80 inches Drainage class: Very poorly drained Runoff class: Negligible Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr) Depth to water table: About 0 inches Frequency of flooding: Very frequent Frequency of ponding: Frequent Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm) Available water supply, 0 to 60 inches: Very high (about 15.5 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8w Hydrologic Soil Group: C/D Hydric soil rating: Yes

#### **Minor Components**

#### Hammonton

Percent of map unit: 5 percent Landform: Depressions, flats Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave, linear Across-slope shape: Concave, linear Hydric soil rating: No

## AtsAO—Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area

#### Map Unit Setting

National map unit symbol: 2thvz Elevation: 0 to 230 feet Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 66 degrees F Frost-free period: 190 to 260 days Farmland classification: Farmland of unique importance

#### **Map Unit Composition**

Atsion and similar soils: 90 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Atsion**

#### Setting

Landform: Flats, drainageways, depressions, deflation flats Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Talf, dip Down-slope shape: Linear, concave Across-slope shape: Linear, concave Parent material: Sandy eolian deposits and/or fluviomarine deposits

#### **Typical profile**

*Oi - 0 to 2 inches:* peat *A - 2 to 4 inches:* sand *E - 4 to 26 inches:* sand *Bhs - 26 to 34 inches:* sand *Cg - 34 to 80 inches:* sand

#### **Properties and qualities**

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.71 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

## Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 5w Hydrologic Soil Group: A/D Hydric soil rating: Yes

#### **Minor Components**

#### Berryland, occasionally flooded

Percent of map unit: 5 percent Landform: Flats, depressions, drainageways, deflation flats Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf, dip Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Lakehurst

Percent of map unit: 5 percent Landform: Flats, low hills Landform position (two-dimensional): Summit, footslope Landform position (three-dimensional): Talf, rise Down-slope shape: Linear Across-slope shape: Linear, convex Hydric soil rating: No

## BerAr—Berryland sand, 0 to 2 percent slopes, rarely flooded

#### Map Unit Setting

*National map unit symbol:* rdtc *Elevation:* 0 to 140 feet

Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F Frost-free period: 161 to 231 days Farmland classification: Farmland of unique importance

#### Map Unit Composition

*Berryland, rarely flooded, and similar soils:* 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### **Description of Berryland, Rarely Flooded**

#### Setting

Landform: Flats, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope, dip Down-slope shape: Linear, concave Across-slope shape: Linear, concave Parent material: Sandy fluviomarine deposits

#### **Typical profile**

Ag - 0 to 11 inches: sand Bh - 11 to 19 inches: sand Bg - 19 to 32 inches: sand B'h - 32 to 40 inches: sand Cg1 - 40 to 44 inches: sand Cg2 - 44 to 80 inches: stratified sand to sandy loam

## Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Rare
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 5w Hydrologic Soil Group: A/D Hydric soil rating: Yes

#### **Minor Components**

#### Mullica, rarely flooded

Percent of map unit: 5 percent Landform: Flood plains, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Atsion

Percent of map unit: 5 percent Landform: Flats Landform position (two-dimensional): Footslope Landform position (three-dimensional): Dip, talf Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

#### Manahawkin, frequently flooded

Percent of map unit: 5 percent Landform: Swamps, flood plains Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

## LakB—Lakehurst sand, 0 to 5 percent slopes

#### Map Unit Setting

National map unit symbol: rdtz Elevation: 20 to 150 feet Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F Frost-free period: 161 to 231 days Farmland classification: Farmland of local importance

#### Map Unit Composition

Lakehurst and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Lakehurst**

#### Setting

Landform: Flats, dunes Down-slope shape: Linear, convex Across-slope shape: Linear, convex Parent material: Sandy fluviomarine deposits

#### **Typical profile**

Oi - 0 to 2 inches: slightly decomposed plant material A - 2 to 4 inches: sand E - 4 to 18 inches: sand Bh - 18 to 32 inches: sand BC - 32 to 45 inches: sand C - 45 to 54 inches: sand Cg - 54 to 80 inches: sand

#### **Properties and qualities**

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches Drainage class: Moderately well drained Runoff class: Very high Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 19.98 in/hr) Depth to water table: About 18 to 42 inches Frequency of flooding: None Frequency of ponding: None Available water supply, 0 to 60 inches: Low (about 4.7 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: A Hydric soil rating: No

#### **Minor Components**

#### Atsion, rarely flooded

Percent of map unit: 5 percent Landform: Flats, depressions Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, dip, talf Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Berryland, rarely flooded

Percent of map unit: 5 percent Landform: Flats, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Quakerbridge

Percent of map unit: 5 percent Landform: Knolls, flats Landform position (three-dimensional): Interfluve Down-slope shape: Convex, linear Across-slope shape: Linear Hydric soil rating: No

## MakAt—Manahawkin muck, 0 to 2 percent slopes, frequently flooded

#### Map Unit Setting

National map unit symbol: rdv3 Elevation: 0 to 140 feet Mean annual precipitation: 28 to 59 inches Mean annual air temperature: 46 to 79 degrees F *Frost-free period:* 161 to 231 days *Farmland classification:* Farmland of unique importance

#### **Map Unit Composition**

Manahawkin, frequently flooded, and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Manahawkin, Frequently Flooded**

#### Setting

Landform: Swamps, flood plains Down-slope shape: Linear Across-slope shape: Linear Parent material: Organic, woody material over sandy alluvium

#### **Typical profile**

*Oa1 - 0 to 13 inches:* muck *Oa2 - 13 to 26 inches:* muck *Oa3 - 26 to 47 inches:* muck *Cg - 47 to 80 inches:* sand

## **Properties and qualities**

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7w Hydrologic Soil Group: A/D Hydric soil rating: Yes

#### **Minor Components**

#### Mullica, rarely flooded

Percent of map unit: 5 percent Landform: Flood plains, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Atsion

Percent of map unit: 5 percent Landform: Flats Landform position (two-dimensional): Footslope Landform position (three-dimensional): Dip, talf *Down-slope shape:* Linear *Across-slope shape:* Linear *Hydric soil rating:* Yes

#### Berryland, occasionally flooded

Percent of map unit: 5 percent Landform: Flats, depressions, drainageways Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

## PHG—Pits, sand and gravel

#### **Map Unit Setting**

National map unit symbol: rdv9 Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F Frost-free period: 131 to 178 days Farmland classification: Not prime farmland

#### Map Unit Composition

*Pits, sand and gravel:* 100 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### **Description of Pits, Sand And Gravel**

#### Setting

Parent material: Sandy material disturbed by human activity

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8s Hydric soil rating: No

## PssA—Psamments, 0 to 2 percent slopes

#### Map Unit Setting

National map unit symbol: 2xhpd Elevation: 0 to 230 feet Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F Frost-free period: 190 to 260 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

*Psamments, nearly level, and similar soils:* 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### **Description of Psamments, Nearly Level**

#### Setting

Landform: Flats Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy human-transported material

#### **Typical profile**

^A - 0 to 12 inches: coarse sand
^C1 - 12 to 36 inches: gravelly coarse sand
^C2 - 36 to 80 inches: sand

#### **Properties and qualities**

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 48 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: A Hydric soil rating: No

#### **Minor Components**

#### Atsion

Percent of map unit: 5 percent Landform: Depressions on flats, drainageways on flats, deflation flats on flats Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Talf, dip Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Berryland, rarely flooded

Percent of map unit: 5 percent Landform: Depressions on flats, drainageways on flats, deflation flats on flats Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf, dip Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

#### Mullica

Percent of map unit: 5 percent Landform: Drainageways on flats, depressions on flats, swales on flats Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: Yes

## PstAt—Psammaquents, sulfidic substratum, 0 to 2 percent slopes, frequently flooded

#### Map Unit Setting

National map unit symbol: 2xhp8 Elevation: 0 to 30 feet Mean annual precipitation: 41 to 50 inches Mean annual air temperature: 46 to 58 degrees F Frost-free period: 190 to 260 days Farmland classification: Not prime farmland

#### Map Unit Composition

*Psammaquents, sulfidic substratum, frequently flooded, and similar soils:* 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

### Description of Psammaquents, Sulfidic Substratum, Frequently Flooded

#### Setting

Landform: Flats Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy lateral spread deposits over organic material

### **Typical profile**

<sup>^</sup>A - 0 to 12 inches: coarse sand <sup>^</sup>C - 12 to 36 inches: gravelly sand 20ese1 - 36 to 43 inches: mucky peat 20ese2 - 43 to 80 inches: mucky peat

#### **Properties and qualities**

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.60 to 20.00 in/hr)
Depth to water table: About 0 inches

*Frequency of flooding:* Frequent *Frequency of ponding:* None *Maximum salinity:* Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm) *Available water supply, 0 to 60 inches:* Very low (about 2.5 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8w Hydrologic Soil Group: A/D Hydric soil rating: Yes

#### **Minor Components**

#### Appoquinimink, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

#### Transquaking, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

#### Pawcatuck, very frequently flooded

Percent of map unit: 5 percent Landform: Tidal marshes on barrier islands Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

## WATER—Water

#### Map Unit Setting

National map unit symbol: 2wx0v Mean annual precipitation: 30 to 64 inches Mean annual air temperature: 46 to 79 degrees F Frost-free period: 131 to 178 days Farmland classification: Not prime farmland

#### Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

## WDC4—Dredge Channel, 1 to 4 meter water depth

#### **Map Unit Setting**

National map unit symbol: 2thxw Elevation: -20 to -10 feet Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F Frost-free period: 365 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

*Water, dredge channel:* 100 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### **Description of Water, Dredge Channel**

#### **Properties and qualities**

Slope: 0 to 2 percent Drainage class: Subaqueous Depth to water table: About 0 inches Frequency of flooding: Very frequent

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8 Hydrologic Soil Group: D Hydric soil rating: Yes

## WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth

#### Map Unit Setting

National map unit symbol: 2thtw Elevation: 0 feet Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F Frost-free period: 365 days Farmland classification: Not prime farmland

#### Map Unit Composition

*Herring creek, 0 to 1 meter water depth, and similar soils:* 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### Description of Herring Creek, 0 To 1 Meter Water Depth

#### Setting

Landform: Estuarine tidal streams

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Linear Parent material: Mainland cove fine-silty estuarine deposits over woody organic material

#### **Typical profile**

Aseg - 0 to 3 inches: mucky silt loam Cseg - 3 to 24 inches: silt loam Oeseb1 - 24 to 51 inches: mucky peat Oeseb2 - 51 to 69 inches: mucky peat

#### **Properties and qualities**

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Subaqueous
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Strongly saline (16.0 to 35.0 mmhos/cm)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8 Hydrologic Soil Group: D Hydric soil rating: Yes

#### **Minor Components**

#### Metedeconk, 0 to 1 meter water depth

Percent of map unit: 10 percent Landform: Estuarine tidal streams Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: Yes

#### Truitt, 0 to 1 meter water depth

Percent of map unit: 5 percent Landform: Mainland coves Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

## WTs2—Truitt-Southpoint complex, 1 to 2 meter water depth

#### Map Unit Setting

National map unit symbol: 2thvl Elevation: -10 to 0 feet Mean annual precipitation: 41 to 49 inches Mean annual air temperature: 53 to 60 degrees F Frost-free period: 365 days Farmland classification: Not prime farmland

#### Map Unit Composition

*Truitt, 1 to 2 meter water depth, and similar soils:* 40 percent *Southpoint, 1 to 2 meter water depth, and similar soils:* 35 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.* 

#### Description of Truitt, 1 To 2 Meter Water Depth

#### Setting

Landform: Mainland coves Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Parent material: Mainland cove fine-silty estuarine deposits

#### **Typical profile**

Aseg - 0 to 1 inches: silty clay loam Cseg - 1 to 77 inches: silty clay loam 2Oaseb - 77 to 88 inches: muck

#### **Properties and qualities**

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Subaqueous
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Strongly saline (16.0 to 35.0 mmhos/cm)

## Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8 Hydrologic Soil Group: D Hydric soil rating: Yes

#### Description of Southpoint, 1 To 2 Meter Water Depth

#### Setting

Landform: Mainland coves Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Parent material: Mainland cove fine-silty estuarine deposits over herbaceous organic material

#### **Typical profile**

Aseg - 0 to 1 inches: silty clay loam Cseg - 1 to 36 inches: silty clay loam Oeseb - 36 to 48 inches: mucky peat Oaseb - 48 to 69 inches: muck

#### **Properties and qualities**

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Subaqueous
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Strongly saline (16.0 to 35.0 mmhos/cm)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8 Hydrologic Soil Group: D Hydric soil rating: Yes

#### **Minor Components**

#### Tumagan, 1 to 2 meter water depth

Percent of map unit: 15 percent Landform: Mainland coves, submerged wave-cut platforms Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Talf Down-slope shape: Concave, linear Across-slope shape: Concave, linear Hydric soil rating: Yes

#### Tingles, 1 to 2 meter water depth

Percent of map unit: 5 percent Landform: Lagoon channels, lagoon bottoms Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip, talf Down-slope shape: Concave Across-slope shape: Linear, concave Hydric soil rating: Yes

Pasture point, 1 to 2 meter water depth Percent of map unit: 5 percent

#### Custom Soil Resource Report

Landform: Submerged wave-cut platforms Landform position (two-dimensional): Footslope Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

## References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2\_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2\_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE\_DOCUMENTS/nrcs142p2\_052290.pdf



## **Attachment B. Site Photographs**



Photo 1: Upland soil profile outside of Wetland A



Photo 2: Upland vegetation outside of Wetland A



Photo 3: Wetland soil profile in Wetland A



Photo 4: Wetland A vegetation facing southeast



Photo 5: Wetland A vegetation facing southwest



Photo 6: Upland soil profile outside of Wetland B



Photo 7: Upland vegetation outside of Wetland B



Photo 8: Wetland soil profile in Wetland B



Photo 9: Wetland B vegetation



Photo 10: Upland soil profile outside of Wetland C



Photo 11: Upland vegetation outside of Wetland C



Photo 12: Wetland soil profile in Wetland C



Photo 13: Wetland C vegetation



Photo 14: Upland soil profile outside of Wetland D



Photo 15: Upland vegetation outside of Wetland D


Photo 16: Wetland soil profile in Wetland D



Photo 17: Wetland D vegetation



Photo 18: Eastern fence lizard in Wetland B



Photo 19: Rough green snake outside Wetland C



Photo 20: Watercourse A associated with Wetland B



Photo 21: Oyster Creek Tributary associated with Wetland C



Photo 22: Upland soil profile outside of Wetland E



Photo 23: Upland vegetation outside of Wetland E



Photo 24: Wetland soil profile in Wetland E



Photo 25: Vegetation in Wetland E



Photo 26: Box turtle in Wetland E



Photo 27: Upland soil profile outside Wetland F



Photo 28: Upland vegetation outside Wetland F



Photo 29: Upland vegetation outside Wetland F on Shore Road facing east



Photo 30: Wetland soil profile in Wetland F



Photo 31: Wetland vegetation in Wetland F



# **Attachment C. Wetland Delineation Datasheets**

U.S. Army Corps of En WETLAND DETERMINATION DATA SHEET – Atlan See ERDC/EL TR-10-20; the proponent	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)				
Project/Site: Orsted	City/County: Ocean	Sampling Date: 5/5/2022			
Applicant/Owner: Orsted		State: NJ Sampling Point: WLA-OP-2-UP			
Investigator(s): DB, DV, SK	Section, Township, Range:	Ocean Twp. Ocean County			
Landform (hillside terrace etc.): Flats	Local relief (concave, convex	none): Slone (%): 0-2			
Subregion (I RR or MI RA): L RR T		Datum:			
Soll Man Unit Name: Betat Beammquante Sulfide substrat	Long	NWL classification: N/A			
As all satis (hudsels site satisfies as the site to site for the	line a fuer a C				
Are climatic / nydrologic conditions on the site typical for this	time of year? Yes X	No (If no, explain in Remarks.)			
Are Vegetation, SoilX_, or Hydrologysign	ificantly disturbed? Are "Normal (	Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrologynatu	rally problematic? (If needed, ex	plain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map sh	owing sampling point locat	ons, transects, important features, etc.			
Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No         Wetland Hydrology Present?       Yes       No	XIs the Sampled AreaXwithin a Wetland?	Yes NoX			
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all th	at apply)	Surface Soil Cracks (B6)			
High Water Table (A2)	sits (B15)	) Drainage Patterns (B10)			
Saturation (A3) Hydrogen	Sulfide Odor (C1)	Moss Trim Lines (B16)			
Water Marks (B1) Oxidized F	Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)			
Sediment Deposits (B2) Presence	of Reduced Iron (C4)	Crayfish Burrows (C8)			
Drift Deposits (B3)	n Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Thin Muck	Surface (C7)	Geomorphic Position (D2)			
Iron Deposits (B5) Other (Exp	plain in Remarks)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes No X D	enth (inches):				
Water Table Present? Yes No X D	epth (inches):				
Saturation Present? Yes X No D	epth (inches): 16 Wetland	Hydrology Present? Yes No X			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, as	rial photos, previous inspections), if a	vailable:			
Pamarke:					
Nonano.					

Sampling Point: WLA-OP-2-UP

	Absolute Dominant Indicator	
Tree Stratum (Plot size:)	% Cover Species? Status	Dominance Test worksheet:
1		Number of Dominant Species
2.		That Are OBL, FACW, or FAC: 0 (A)
3		Total Number of Dominant
4		Species Across All Strata: 1 (B)
5		Percent of Dominant Species
6		That Are OBL, FACW, or FAC: 0.0% (A/B)
	=Total Cover	Prevalence Index worksheet:
50% of total cover:	20% of total cover:	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)		OBL species 15 x 1 = 15
1.		FACW species $0   x 2 = 0$
2.		FAC species $0 \times 3 = 0$
3.		FACU species 2 x 4 = 8
4.		UPL species $70 \times 5 = 350$
5		Column Totals: 87 (A) 373 (B)
6		$\frac{B}{B} = \frac{B}{A} = \frac{429}{B}$
	-Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover		1 Papid Test for Hydrophytic Vogetation
		2 - Dominance Test is >50%
1		$3 - \text{Prevalence index is } \le 3.0^{\circ}$
2		Problematic Hydrophytic Vegetation (Explain)
3		
4		
5		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6		present, unless disturbed or problematic.
	=Total Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover:	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 5)		approximately 20 ft (6 m) or more in height and 3 in.
1. Ammophila breviligulata	70 Yes UPL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Puccinellia maritima	15NoOBL	<b>Sapling</b> – Woody plants, excluding woody vines,
3. Plantago arenaria	2 No FACU	approximately 20 ft (6 m) or more in height and less
4.		than 3 in. (7.6 cm) DBH.
5.		Shrub - Woody Plants, excluding woody vines,
6.		approximately 3 to 20 ft (1 to 6 m) in height.
7.		
8		herbaceous vines regardless of size and woody
a		plants, except woody vines, less than approximately 3
10		ft (1 m) in height.
11		Woody Vine – All woody vines regardless of height
····		
500/ // /		
50% of total cover: 4	4 20% of total cover: 18	
Woody Vine Stratum (Plot size:)		
1		
2.		
3		
4		
5.		
		Hydrophytic
	=Total Cover	Hydrophytic Vegetation
50% of total cover:	=Total Cover 20% of total cover:	Hydrophytic Vegetation Present? Yes No X
50% of total cover:	=Total Cover 20% of total cover:	Hydrophytic Vegetation Present? Yes <u>No X</u>

Profile Desc	ription: (Describe	to the dept	h needed to doc	ument t	he indica	ator or c	onfirm the	absence o	of indica	ators.)		
Depth	Matrix		Redo	x Featu	res							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Tex	ture		Rer	narks	
0-8	10YR 5/6	75					Sa	ndy	San	d with pebt	oles, som	e quartz
8-16	10YR 5/6	75					Sa	ndy		Sand wi	th pebble	s
					, <u> </u>							. <u> </u>
<u> </u>					·							
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, N	∕IS=Mas	sked Sand	d Grains.	2	Location: F	PL=Pore	Lining, M=	Matrix.	
Hydric Soil I	ndicators: (Applica	ble to all L	RRs, unless othe	erwise r	noted.)			Indicators f	or Prob	lematic H	ydric Soi	ils <sup>3</sup> :
Histosol	(A1)		Thin Dark St	urface (	S9) <b>(LRR</b>	S, T, U)	_	1 cm M	uck (A9)	(LRR O)		
Histic Ep	ipedon (A2)		Barrier Islan	ds 1 cm	ı Muck (S	12)	_	2 cm M	uck (A10	D) (LRR S)		
Black His	stic (A3)		(MLRA 15	3B, 153	3D)		_	Coast P	rairie R	edox (A16)		
Hydroge	n Sulfide (A4)		Loamy Muck	<y miner<="" td=""><td>ral (F1) <b>(L</b></td><td>RR O)</td><td>-</td><td>(outsi</td><td>de MLF</td><td>RA 150A)</td><td></td><td></td></y>	ral (F1) <b>(L</b>	RR O)	-	(outsi	de MLF	RA 150A)		
Stratified	Layers (A5)		Loamy Gley	ed Matri	ix (F2)		_	Reduce	d Vertic	(F18)		
Organic	Bodies (A6) <b>(LRR P,</b>	T, U)	Depleted Ma	atrix (F3)	)		_	(outsi	de MLF	RA 150A, 1	50B)	
5 cm Mu	cky Mineral (A7) <b>(LR</b>	R P, T, U)	Redox Dark	Surface	∍ (F6)		_	Piedmo	nt Flood	plain Soils	(F19) <b>(L</b> l	RR P, T)
Muck Pre	esence (A8) <b>(LRR U</b> )	Depleted Da	ırk Surfa	ace (F7)		_	Anomal	ous Brig	ht Floodpla	ain Soils	(F20)	
1 cm Mu	ck (A9) <b>(LRR P, T)</b>		Redox Depre	essions	(F8)			(MLR	A 153B)	)		
Depleted	Below Dark Surface	∋ (A11)	Marl (F10) <b>(I</b>	LRR U)			_	_Red Pa	rent Mat	erial (F21)		
Thick Da	rk Surface (A12)		Depleted Oc	Depleted Ochric (F11) (MLRA 151)					allow D	ark Surface	e (F22)	
Coast Pr	airie Redox (A16) ( <b>N</b>	ILRA 150A)	) Iron-Mangar	nese Masses (F12) (LRR O, P, T) (out					de MLF	RA 138, 15	2A in FL,	, 154)
Sandy M	ucky Mineral (S1) <b>(L</b>	.RR O, S)	Umbric Surfa	ace (F1:	3) (LRR F	P, T, U)	_	Barrier	slands l	ands Low Chroma Matrix (TS7)		
Sandy G	leyed Matrix (S4)		Delta Ochric	Delta Ochric (F17) (MLRA 151)				(MLR	A 153B,	153D)		
Sandy R	edox (S5)		Reduced Ve	rtic (F18	c (F18) (MLRA 150A, 150B) Other (Explain in Remark					n Remarks	)	
Stripped	Matrix (S6)		Piedmont Fl	oodplair	n Soils (F	19) <b>(MLF</b>	RA 149A)					
Dark Sur	face (S7) <b>(LRR P, S</b>	, T, U)	Anomalous	Bright F	loodplain	Soils (F2	20)					
Polyvalu	e Below Surface (S8	)	(MLRA 14	9A, 153	3C, 153D)			<sup>3</sup> Indicate	ors of hy	drophytic v	egetatio	n and
(LRR S	S, T, U)		Very Shallov	v Dark S	Surface (F	22)		wetla	nd hydr	ology must	be prese	ent,
			(MLRA 13	8, 1524	in FL, 1	54)		unles	s distur	bed or prob	lematic.	
Restrictive L	ayer (if observed):											
Type:												
Depth (in	iches):						Hydric	Soil Prese	nt?	Yes	No	X
Remarks:												
0-8 10YR 3/3	; 25%, 8-16 10YR 3/;	3 25%										

WETLAND DETERMIN See ERDC/E	U.S. Army ATION DATA L TR-10-20; 1	<b>Plain Region</b> O-R	OMB Control #: Requirement ( (Authority: AF	0710-0024, Exp: 11/30/2024 Control Symbol EXEMPT: R 335-15, paragraph 5-2a)					
Project/Site: Orsted				City/Count	ty: Ocean JWP/	Ocean	Sampling Date: 5/5/2022		
Applicant/Owner: Orste	d			_ `	·	State: NJ	Sampling Point: WLA-OP-1-W		
Investigator(s): DB, DV, SK			Se	ection. Towns	ship, Range: Oc	cean Twp. Ocean Co	untv		
Landform (hillside terrace e	etc.): Flats		Loca	l relief (conca	ave convex non	ie).	Slope (%): 0-2		
Subregion (I RR or MI RA):		l at:			Long.		Olope (76) 0 2		
Soil Map Unit Name: PSTA		s Sulfide su	hstratum		Long.	NWI classificat	ion: N/A		
Are elimetia / hydrologia con	ditions on the si			2	Vee V		valoin in Domorka )		
Are climatic / hydrologic con				؛ سام ماک		(II IIO, e			
Are vegetation, Soil		logy	significantly dist	urbed? A		imstances present?			
Are Vegetation, Soil	, or Hydro	ology	naturally probler	natic? (l	f needed, explai	n any answers in Re	marks.)		
SUMMARY OF FINDI	NGS – Attacl	n site map	showing sa	ampling po	oint location	s, transects, im	portant features, etc		
Hydrophytic Vegetation Pre Hydric Soil Present? Wetland Hydrology Presen	esent?	Yes X Yes X Yes X	No No	Is the San within a W	npled Area /etland?	Yes <u>X</u>	No		
HYDROLOGY									
Wetland Hydrology Indica	itors:				Se	condarv Indicators (	minimum of two required)		
Primary Indicators (minimu	m of one is requ	ired; check a	II that apply)			Surface Soil Crack	as (B6)		
Surface Water (A1)		Aquati	c Fauna (B13)		Sparsely Vegetated Concave Surface (B8)				
x High Water Table (A2)		Marl D	eposits (B15) <b>(L</b>	RR U) Drainage Patterns (B10)					
x Saturation (A3)		Hydro	gen Sulfide Odo	(C1) Moss Trim Lines (B16)					
Water Marks (B1) Sediment Deposits (B2	)		ea Rhizospheres	s on Living Roots (C3) Dry-Season Water Table (C2)					
Drift Deposits (B3)	)	Recen	t Iron Reduction	in Tilled Soil	s (C6)	Saturation Visible	on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		 Thin N	luck Surface (C	7)		- Geomorphic Positi	pmorphic Position (D2)		
Iron Deposits (B5)		Other	(Explain in Rem	narks)Shallow Aquitard (D3)					
Inundation Visible on A	erial Imagery (B	7)			<u></u> X	FAC-Neutral Test	(D5)		
Water-Stained Leaves	(B9)					_Sphagnum Moss (	D8) <b>(LRR T, U)</b>		
Field Observations:									
Surface Water Present?	Yes		Depth (inches	):					
Saturation Present?	Yes x	No	Depth (inches	): <u>10</u>	Wetland Hvo	rology Present?	Yes X No		
(includes capillary fringe)							<u>.</u>		
Describe Recorded Data (s	tream gauge, m	onitoring wel	l, aerial photos,	previous insp	pections), if avail	able:			
Remarks:									

Sampling Point: WLA-OP-1-WET

	Absolute Domir	nant Indicator	Deminence Test workshoet
<u>Tree Stratum</u> (Plot size:)	% Cover Speci	es? Status	Dominance Test Worksneet:
2.			Number of Dominant Species           That Are OBL, FACW, or FAC:         3         (A)
3.			Total Number of Dominant
4			
6			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
	=Total C	over	Prevalence Index worksheet:
50% of total cover:	20% of total	cover:	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)			OBL species 0 x 1 = 0
1			FACW species 110 x 2 = 220
2.			FAC species 20 x 3 = 60
3			FACU species x 4 =
4			UPL species 0 x 5 = 0
5			Column Totals: 130 (A) 280 (B)
6.			Prevalence Index = $B/A = 2.15$
	=Total C	over	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total	cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 )			X 2 - Dominance Test is >50%
1. Baccharis halmifolia	20 Ye	s FAC	X 3 - Prevalence Index is $\leq 3.0^1$
2. Solidado sempervirens	20 Ye	s FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.			
4			
5			1
5			'Indicators of hydric soil and wetland hydrology must be
0.		over	Definitions of Five Vegetation Strata:
50% of total cover: 20	20% of total	cover: 8	
Herb Stratum (Plot size: 5 )			approximately 20 ft (6 m) or more in height and 3 in.
1 Sparting nations	90 Ve	s FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2			<b>Capling</b> Weady planta evoluting weady vince
2			saping – woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
4.			than 3 in. (7.6 cm) DBH.
5			<b>Shrub</b> - Woody Plants, excluding woody vines,
6.			
<i>I</i>			Herb – All herbaceous (non-woody) plants, including
8			herbaceous vines, regardless of size, and woody
9			ft (1 m) in height.
10			
11			<b>Woody Vine</b> – All woody vines, regardless of height.
	90 =Total C	over	
50% of total cover: 45	20% of total	cover: 18	
Woody Vine Stratum (Plot size:)			
1			
2			
3.			
4.			
5.			
	=Total C	over	Hydrophytic
50% of total cover:	20% of total	cover:	Present? Yes X No

Profile Desc	ription: (Describe Matrix	to the dep	oth needed to doo	ument the in	ndica	itor or co	onfirm th	e absence of	indicate	ors.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Ty	/pe <sup>1</sup>	Loc <sup>2</sup>	Te	xture		Rema	arks
0-7	10YR 3/2	60	10YR 5/3	35			Sa	andy	Fine sand		
			10YR 3/6	5						Sand, litt	tle clay
7-16	10YR 4/3	100					Sa	andy	Sand	, little clay,	some pebbles
16-24	10YR 4/3	80	10YR 7/2	20			Sa	andv		Sandv	clav
				·							
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix,	MS=Masked	Sano	Grains.		<sup>2</sup> Location: PL	=Pore L	ining, M=N	latrix.
Histosol	(A1)	Thin Dark S	Thin Dark Surface (S9) (I RR S. T. U)					k (A9) (	LRR O)		
Histic Ep	pipedon (A2)	Barrier Islar	Barrier Islands 1 cm Muck (S12)					2 cm Muck (A10) (LRR S)			
Black Hi	stic (A3)	(MLRA 1	53B. 153D)	<b>,</b> -	,		Coast Pra	irie Red	lox (A16)		
Hydrogen Sulfide (A4)				kv Mineral (F	1) <b>(L</b>	RR O)		(outsid	e MLRA	150A)	
Stratified	Lavers (A5)	Loamy Glev	ed Matrix (F2	2)	-,		Reduced	Vertic (F	-18)		
Organic	Bodies (A6) (LRR P.	Depleted M	atrix (F3)	,			(outsid	e MLRA	150A. 150	)B)	
5 cm Mu	icky Mineral (A7) (LR	, RR P. T. U	Redox Dark	Surface (F6	)		Piedmont Floodplain Soils (F19) (LRR P, T)				
Muck Pr	esence (A8) (LRR U	)	Depleted Da	Depleted Dark Surface (F7)					Anomalous Bright Floodplain Soils (F20)		
1 cm Mu	ick (A9) (LRR P. T)	,	Redox Dep						(MLRA 153B)		
Depleted	Below Dark Surface	e (A11)	Marl (F10) (	(LRR U)			Red Parent Material (F21)				
Thick Da	ark Surface (A12)	- ( )	Depleted O	chric (F11) <b>(N</b>	/LR/	151)	•	Very Shallow Dark Surface (F22)			
Coast Pr	rairie Redox (A16) (N	ALRA 150	A) Iron-Manga	Iron-Manganese Masses (F12) (I RR O P T)					(outside MI RA 138, 152A in FL, 154)		
Sandv M	luckv Mineral (S1) <b>(L</b>	.RR O. S)	Umbric Sur	face (F13) <b>(L</b>	RR F	P. T. U)	-,-,- <b>,</b>	Barrier Isl	ands Lo	w Chroma	Matrix (TS7)
Sandy G	ileved Matrix (S4)	-,-,	Delta Ochri	c (F17) <b>(MLR</b>	A 15	, ., ., 1)		(MLRA	153B. 1	53D)	
X Sandy R	edox (S5)		Reduced V	ertic (F18) (M	LRA	, 150A, 15	50B)	Other (Ex	plain in	Remarks)	
Stripped	Matrix (S6)		Piedmont F	loodplain Soi	ls (F	19) <b>(MLR</b>	A 149A)			,	
Dark Su	rface (S7) <b>(LRR P. S</b>	5. T. U)	Anomalous	Bright Flood	olain	Soils (F2	0)				
Polyzalua Balow Surface (S8) (MI RA 149A 153C 153D)						0)	<sup>3</sup> Indicator	s of hvd	rophytic ve	getation and	
(LRR :	(IRR S T II) Very Shallow Dark Surface (50)							wetland hydrology must be present			
(	-, , -, -,		(MLRA 1	38, 152A in F	FL, 1	54)		unless	disturbe	d or proble	matic.
Restrictive I	Layer (if observed):										
Type:											
Depth (ir	nches):						Hydric	: Soil Present	?	Yes X	No
Remarks:											

WETLAND DETERMINA See ERDC/EI	<b>U.S. Army</b> ATION DATA _ TR-10-20; 1	OMB Control #: 07 Requirement Co (Authority: AR 3	710-0024, Exp: 11/30/2024 ontrol Symbol EXEMPT: 335-15, paragraph 5-2a)						
Proiect/Site: Ocean Wind				Citv/Countv	: Ocean	S	Sampling Date: 5/5/2022		
Applicant/Owner: Orstee	4					State: NJ S	ampling Point: WIB-OP2-UE		
Investigator(s): DB DV SK			S	ection Townsh	in Range: Oc				
Londform (hilloide, torrage, o				al raliat (conco					
Cubrasian (LDD as MLDA):		<del>.</del>	LUCa			=).	Slope (%)		
Subregion (LRR or MLRA):		Lat:			Long:		Datum:		
Soil Map Unit Name: Lakeh	urst Sand 0-5%	slope				NWI classification	n: PFO1B		
Are climatic / hydrologic cond	ditions on the sit	te typical for	this time of year	r?	′es <u>X</u> N	No (If no, exp	blain in Remarks.)		
Are Vegetation, Soil	, or Hydro	ology	significantly dist	turbed? Are	e "Normal Circu	mstances" present?	Yes X No		
Are Vegetation, Soil	, or Hydro	ology	naturally probler	matic? (If	needed, explain	any answers in Rem	arks.)		
SUMMARY OF FINDIN	IGS – Attach	n site ma	p showing sa	ampling po	int locations	s, transects, imp	ortant features, etc.		
Hydrophytic Vegetation Pre	sent?	Yes	No X	Is the Sam	oled Area				
Hydric Soil Present?		Yes	No X	within a Wo	etland?	Yes	No <u>X</u>		
Wetland Hydrology Present	?	Yes	No X						
Remarks:									
HYDROLOGY									
Wetland Hydrology Indica	tors:	inadi ala ali			Sec	condary Indicators (m	inimum of two required)		
Surface Water (A1)	n or one is requ		tic Found (R12)			_ Surface Soil Cracks (B6)			
High Water Table (A2)		Marl [	Deposits (B15) <b>(I</b>	RR U)		Drainage Patterns (B10)			
Saturation (A3)		Hydro	ogen Sulfide Odo	or (C1)	Moss Trim Lines (B16)				
Water Marks (B1)		Oxidiz	zed Rhizosphere	s on Living Ro	ots (C3)	Dry-Season Water Table (C2)			
Sediment Deposits (B2	)	Prese	ence of Reduced	Iron (C4)		Crayfish Burrows (C	8)		
Drift Deposits (B3)		Rece	nt Iron Reduction	n in Tilled Soils	(C6)	Saturation Visible or	n Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Thin I	Muck Surface (C	7)		Geomorphic Position	n (D2)		
Iron Deposits (B5)		Other	· (Explain in Rem	narks)		Shallow Aquitard (D	3)		
Inundation Visible on A	erial Imagery (B	57)				FAC-Neutral Test (D			
	(pa)					_Sphaghum Moss (D	0) <b>(LRR 1, U)</b>		
Field Observations:	Voc	No Y	Dopth (inchos	-)·					
Water Table Present?	Yes		Depth (inches	s)					
Saturation Present?	Yes	No X	Depth (inches	s):	Wetland Hyd	rology Present?	Yes No X		
(includes capillary fringe)			- · `	, <u> </u>					
Describe Recorded Data (st	ream gauge, m	onitoring we	ell, aerial photos,	previous inspe	ctions), if availa	ble:			
Pomorko									
Remarks.									

Sampling Point: WLB-OP2-UP

Trop Stratum (Dist size: 20)	Absolute Dominant	Indicator	Deminance Test werkeheet:
<u>Tree Stratum</u> (Flot size. <u>50</u> )			Dominance rest worksheet.
2.	<u>40 res</u>	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
3.			Total Number of Dominant
4.			Species Across All Strata: <u>3</u> (B)
5			Percent of Dominant Species
6			That Are OBL, FACW, or FAC: 33.3% (A/B)
	40 =Total Cover		Prevalence Index worksheet:
50% of total cover: 20	20% of total cover:	8	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)			OBL species x 1 =
1			FACW species 0 x 2 = 0
2			FAC species X 3 = 90
3			FACU species <u>50</u> x 4 = <u>200</u>
4			UPL species $0   x 5 = 0$
5			Column Totals: 80 (A) 290 (B)
6			Prevalence Index = B/A = 3.63
	=Total Cover		Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 5 )			2 - Dominance Test is >50%
1. Morella pensylvanica	<u>30 Yes</u>	FAC	3 - Prevalence Index is ≤3.0'
2.			Problematic Hydrophytic Vegetation' (Explain)
3.			
4			
5.			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6.			present, unless disturbed or problematic.
		0	Definitions of Five vegetation Strata:
SU% of total cover:		0	<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in
Herb Stratum (Plot size:)			(7.6 cm) or larger in diameter at breast height (DBH).
·			
2			<b>Sapling</b> – woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3			than 3 in. (7.6 cm) DBH.
+			Shruh - Woody Plants, excluding woody vines
6.			approximately 3 to 20 ft (1 to 6 m) in height.
7.			Herb – All herbaceous (non-woody) plants, including
8.			herbaceous vines, regardless of size, and woody
9.			plants, except woody vines, less than approximately 3
10.			ft (1 m) in height.
11.			Woody Vine – All woody vines, regardless of height.
	=Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 30 )			
1. Parthenocissus quinquefolia	10 Yes	FACU	
2.			
3.			
4.			
5.			Hudrophytic
	10 =Total Cover		nyaropnytic Vegetation
50% of total cover: 5	20% of total cover:	2	Present? Yes No X
Remarks: (If observed, list morphological adaptation			·
Remarks. (ii observed, list morphological adaptation	is below.)		

Profile Desc	ription: (Describe t	o the dept	h needed to docu	iment the indica	tor or co	onfirm th	e absence of inc	licators.)	
Depth	Matrix		Redox	K Features	. 2	_		_	
(inches)	Color (moist)	%	Color (moist)	% Type	Loc	Те	xture	Remar	ks
0-3	7.5YR 3/3	100				F	Peat	Organic m	aterial
3-22	7.5YR 4/6	100				Sa	Sandy Fine sand with pebble		
		<u> </u>							
<sup>1</sup> Type: C=Co	oncentration, D=Deple	etion, RM=F	Reduced Matrix, M	IS=Masked Sand	l Grains.		<sup>2</sup> Location: PL=P	ore Lining, M=Ma	ıtrix.
Hydric Soil I	ndicators: (Applical	ble to all L	RRs, unless othe	rwise noted.)			Indicators for P	roblematic Hydr	ic Soils <sup>3</sup> :
Histosol (A1)			Thin Dark Su	urface (S9) <b>(LRR</b>	S, T, U)		1 cm Muck (	A9) <b>(LRR O)</b>	
Histic Epipedon (A2)			Barrier Island	ds 1 cm Muck (S	12)		2 cm Muck (A10) (LRR S)		
Black Histic (A3)			(MLRA 15	3B, 153D)			Coast Prairie	e Redox (A16)	
Hydrogen Sulfide (A4)			Loamy Muck	y Mineral (F1) <b>(L</b>	RR O)		(outside N	ILRA 150A)	
Stratified Layers (A5)			Loamy Gleye	ed Matrix (F2)			Reduced Ve	rtic (F18)	
Organic	Organic Bodies (A6) (LRR P, T, U)			trix (F3)			(outside N	ILRA 150A, 150E	3)
5 cm Mu	cky Mineral (A7) <b>(LR</b>	R P, T, U)	Redox Dark	Surface (F6)			Piedmont Fle	oodplain Soils (F1	9) <b>(LRR P, T)</b>
Muck Pre	esence (A8) (LRR U)		Depleted Dat	rk Surface (F7)		Anomalous Bright Floodplain Soils (F20)			
1 cm Mu	ck (A9) (LRR P, T)		Redox Depre	essions (F8)			(MLRA 153B)		
Depleted	Below Dark Surface	(A11)	Marl (F10) (L	.RR U)			Red Parent Material (F21)		
Thick Da	rk Surface (A12)	( )	Depleted Oc	, hric (F11) <b>(MLR</b>	151)		Very Shallow Dark Surface (F22)		
Coast Pr	airie Redox (A16) (M	LRA 150A)	Iron-Mangan	ese Masses (F1)	2) (LRR C	). P. T)	(outside MLRA 138, 152A in FL, 154)		
Sandv M	uckv Mineral (S1) (LI	RR O. S)	Umbric Surfa	ace (F13) (LRR F	. T. U)	, . , . ,	Barrier Islands I ow Chroma Matrix (TS7)		
Sandy G	leved Matrix (S4)	-,-,	Delta Ochric	(F17) (MLRA 15	1)		(MI RA 153B, 153D)		
Sandy R	edox (S5)		Reduced Ver	rtic (F18) <b>(MLRA</b>	150A. 15	60B)	Other (Explain in Remarks)		
Stripped	Matrix (S6)		Piedmont Flo	odolain Soils (F	19) <b>(MI R</b>	A 149A)			
Dark Sur	face (S7) (I RR P. S.	т. U)	Anomalous F	Bright Floodplain	Soils (F2)	0)			
Polyvalu	e Below Surface (S8)	., .,	(MI RA 14)	94 153C 153D)	00110 (1 2	0)	<sup>3</sup> Indicators o	f hydronhytic yea	etation and
Polyvalue Below Surface (S8) (MLRA 149A, 153C, 1				/ Dark Surface (F				vdrology must be	present
	3, 1, 0)		(MLRA 13	8, 152A in FL, 1	54)		unless dis	turbed or problem	natic.
Restrictive L	ayer (if observed):								
Type:									
Depth (ir	iches):					Hydri	c Soil Present?	Yes	No <u>X</u>
Remarks:									

U.S. Army Corps of Engin WETLAND DETERMINATION DATA SHEET – Atlantic See ERDC/EL TR-10-20; the proponent ag	neers and Gulf Coastal Plain Region ency 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: Ocean Wind	City/County: Ocean Towns	hip Sampling Date: 5/5/2022				
Applicant/Owner: Orsted	· · ·	State: NJ Sampling Point: WLB-OP1-WET				
Investigator(s): DB. DV. SK	Section. Township. Range: Oc					
Landform (hillside terrace etc.): Depressional	Local relief (concave, convex, non	a): Concave Slope (%): 0-5				
Subregion (I RR or MI RA): I RR T		Datum:				
Soil Man Unit Name: PetAt: Psammauents Sulfide substratum		NW/I classification: PEO1B				
Are elimentia / hudrele sie een ditiere en the eite thried for this time						
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 Hydrologysignifica	ntly disturbed? Are "Normal Circu	mstances" present? Yes X No				
Are Vegetation, Soil, or Hydrologynaturally	problematic? (If needed, explain	any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map show	ring sampling point locations	s, transects, important features, etc.				
Hydrophytic Vegetation Present?       Yes       X       No         Hydric Soil Present?       Yes       X       No         Wetland Hydrology Present?       Yes       X       No         Bemerko:       Yes       X       No	Is the Sampled Area within a Wetland?	Yes <u>X</u> No				
HYDROLOGY						
Wetland Hydrology Indicators:	Se	condary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; check all that a		Surface Soil Cracks (B6)				
Surface Water (A1) Aquatic Fauna	(B13)	Sparsely Vegetated Concave Surface (B8)				
X High Water Table (A2) Marl Deposits	(B15) <b>(LRR U)</b>	Drainage Patterns (B10)				
X Saturation (A3) Hydrogen Sulf	ide Odor (C1)	Moss Trim Lines (B16)				
X Water Marks (B1) Oxidized Rhize	ospheres on Living Roots (C3)	Dry-Season Water Table (C2)				
Sediment Deposits (B2) Presence of R	educed Iron (C4)	Crayfish Burrows (C8)				
Algal Mat or Crust (B4)		Geomorphic Position (D2)				
Iron Deposits (B5)	in Remarks)	Shallow Aguitard (D3)				
Inundation Visible on Aerial Imagery (B7)	<u>x</u>	FAC-Neutral Test (D5)				
X Water-Stained Leaves (B9)		Sphagnum Moss (D8) (LRR T, U)				
Field Observations:						
Surface Water Present? Yes No X Depth	(inches):					
Water Table Present? Yes X No Depth	(inches): <u>3</u>					
Saturation Present? Yes X No Depth	(inches): 0 Wetland Hyd	rology Present? Yes X No				
(includes capillary fringe)	nhotop, provinue increatione), if evolu	blo				
Describe Recorded Data (stream gauge, monitoring weil, aenal	photos, previous inspections), ir availa	DIE.				
Remarks:						

Sampling Point: WLB-OP1-WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test worksheet:
1. Acer rubrum	70	Yes	FAC	Number of Dominant Species
2. Pinus rigida	20	Yes	FACU	That Are OBL, FACW, or FAC:4 (A)
3				Total Number of Dominant
4				Species Across All Strata: 6 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
	90	=Total Cover		Prevalence Index worksheet:
50% of total cover: 4	5 20%	of total cover:	18	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)				OBL species 30 x 1 = 30
1				FACW species 30 x 2 = 60
2.				FAC species 80 x 3 = 240
3.				FACU species $20   x 4 = 80$
4.				UPL species $0 \times 5 = 0$
5				$\begin{array}{c} \hline \hline$
6				$\frac{1}{100} \frac{1}{100} \frac{1}$
0.		Total Cover		
				A Daniel Test (and hedrachedia ) (a notation
50% of total cover:	20%	of total cover:		1 - Rapid Test for Hydrophytic Vegetation
<u>Shrub Stratum</u> (Plot size: <u>5</u> )				X 2 - Dominance Test is >50%
1. UID shrub	40	Yes		X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Smilax bona-nox	10	Yes	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				
4				
5.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6.				present, unless disturbed or problematic.
	50	=Total Cover		Definitions of Five Vegetation Strata:
50% of total cover: 2	5 20%	of total cover:	10	Tree – Woody plants, excluding woody vines
Herb Stratum (Plot size: 5 )				approximately 20 ft (6 m) or more in height and 3 in.
1 Carex stricta	30	Ves	OBI	(7.6 cm) or larger in diameter at breast height (DBH).
2 Phragmitas quetralis	30	Voc		
		165	TACW	Sapling – woody plants, excluding woody vines,
3.				than 3 in. (7.6 cm) DBH.
4.				
5				Shrub - Woody Plants, excluding woody vines,
6.				approximately 5 to 20 ft (1 to 6 ff) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				rt (1 m) in neight.
11.				Woody Vine – All woody vines, regardless of height.
	60	=Total Cover		
50% of total cover: 3	0 20%	of total cover:	12	
Woody Vine Stratum (Plot size:				
1				
··				
2.				
3.				
4				
5				Hydrophytic
		=Total Cover		Vegetation
50% of total cover:	20%	of total cover:		Present?         Yes X         No
Remarks: (If observed, list morphological adaptation	ns below.)			

Profile Desci	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or co	onfirm the absence	e of indicators.)		
Depth (incluse)	Matrix		Redo	x Featur	res Trans 1	1 2	Tartan	Demedia		
(Inches)	Color (moist)	%	Color (moist)	%	Туре	LOC	I exture	Remarks		
0-4	10YR 2/1	100					Loamy/Clayey	Silty loam, some organic		
4-8	10YR 3/1	100					Loamy/Clayey	Silt, some sand, some clay		
8-14	10YR 4/1	100					Sandy	Sand		
14-24	10YR 6/8	90	10YR 2/1	10	С	M	Sandy	Prominent redox concentrations		
							, , , , , , , , , , , , , , , , , , ,			
<sup>1</sup> Type: C=Co	ncentration, D=Depl	letion, RM	=Reduced Matrix, I	NS=Mas	ked Sand	d Grains.	<sup>2</sup> Location:	: PL=Pore Lining, M=Matrix.		
Hydric Soil I	ndicators: (Applica	ble to all	LRRs, unless othe	erwise n	oted.)		Indicator	s for Problematic Hydric Soils <sup>3</sup> :		
Histosol (	(A1)		Thin Dark S	urface (S	59) <b>(LRR</b>	S, T, U)	1 cm	1 cm Muck (A9) <b>(LRR O)</b>		
Histic Epi	Barrier Islan	ds 1 cm	Muck (S	12)	2 cm	Muck (A10) <b>(LRR S)</b>				
Black His	tic (A3)	(MLRA 15	53B, 153	D)		Coas	t Prairie Redox (A16)			
Hydroger	n Sulfide (A4)	Loamy Muc	ky Miner	al (F1) <b>(L</b>	.RR O)	(ou	tside MLRA 150A)			
Stratified	Layers (A5)	Loamy Gley	ed Matri	x (F2)		Redu	ced Vertic (F18)			
Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3)							(ou	tside MLRA 150A, 150B)		
5 cm Mud	cky Mineral (A7) <b>(LR</b>	R P, T, U)	Redox Dark	Surface	(F6)		Piedr	nont Floodplain Soils (F19) (LRR P, T)		
Muck Pre	esence (A8) (LRR U	)	Depleted Da	ark Surfa	ice (F7)		Anom	Anomalous Bright Floodplain Soils (F20)		
1 cm Muo	ck (A9) <b>(LRR P, T)</b>		Redox Depr	essions	(F8)		(MI	(MLRA 153B)		
Depleted	Below Dark Surface	e (A11)	Marl (F10) (	LRR U)			Red I	Red Parent Material (F21)		
Thick Da	rk Surface (A12)		Depleted Oc	chric (F1	1) (MLR/	A 151)	Very	Very Shallow Dark Surface (F22)		
Coast Pra	airie Redox (A16) ( <b>N</b>	ILRA 1504	A) Iron-Mangar	nese Ma	sses (F1)	2) (LRR C	), P, T) (ou	) (outside MLRA 138, 152A in FL, 154)		
Sandy M	ucky Mineral (S1) (L	.RR O, S)	Umbric Surf	ace (F13	3) (LRR F	P, T, U)	Barrie	er Islands Low Chroma Matrix (TS7)		
Sandy GI	eved Matrix (S4)		Delta Ochrid	(F17) <b>(I</b>	MLRA 15	51)	(MI	_RA 153B. 153D)		
X Sandy Re	edox (S5)		Reduced Ve	ertic (F18	B) (MLRA	150A, 15	50B) Other	r (Explain in Remarks)		
Stripped	Matrix (S6)		Piedmont Fl	oodplain	Soils (F	19) <b>(MLR</b>	A 149A)	()		
Dark Sur	face (S7) <b>(LRR P. S</b>	. T. U)	Anomalous	Bright Fl	loodplain	Soils (F2	0)			
Anomaious Bright Floodplain Solis (F2     Anomaious Bright Floodplain Solis (F2     MI PA 140A 152C 152D)					00110 (1 2	<sup>3</sup> Indic	ators of hydrophytic vegetation and			
	(IPP S T II) (IMLKA 149A, 1330, 133D)					we	tland bydrology must be present			
	-, -, <b>-,</b>		(MLRA 13	88, 152A	in FL, 1	, 54)	un	less disturbed or problematic.		
Restrictive L	ayer (if observed):									
Type:										
Depth (in	ches):						Hydric Soil Pre	sent? Yes X No		
Remarks:										

WETLAND DETERMIN See ERDC/E	U.S. Army ATION DATA L TR-10-20;	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)						
Project/Site: Orsted				City/Count	y: Ocean		Sampling Date: 5/6/2022	
Applicant/Owner: Orste	d			_		State: NJ	Sampling Point: WLC-OP2-UI	
Investigator(s): DV, SS, SK			Se	ection, Towns	hip, Range: Oc	ean Twp		
Landform (hillside, terrace, e	etc.): Top of sl	ope	Loca	l relief (conca	ave. convex. none	<i></i>	Slope (%): 0-2	
Subregion (I RR or MI RA):		l at:			Long:		0.0pc (///)	
Soil Man Unit Name: Mana	hawkin Muck 0-'	2% slones				NWI classificat	ion: PEO4Ea/ PEO4/1C	
Are elimetia / hydrologia een			this time of your	2	Vac V			
Are climatic / hydrologic con	allons on the si		this time of year	f		NO (II NO, e	xpiain in Remarks.)	
Are vegetation, Soil	, or Hydro	ology	significantly dist	urbed? A	re "Normal Circul	mstances present?	Yes X NO	
Are Vegetation, Soil	, or Hydro	ology	naturally problen	natic? (II	f needed, explain	any answers in Re	marks.)	
SUMMARY OF FINDI	NGS – Attacl	h site map	o showing sa	mpling po	oint locations	s, transects, im	portant features, etc.	
Hydrophytic Vegetation Pre Hydric Soil Present? Wetland Hydrology Presen	isent? t?	Yes X Yes Yes	No No _ X No _ X	Is the Sam within a W	npled Area /etland?	Yes	No <u>X</u>	
HYDROLOGY								
Wetland Hydrology Indica	ators:				Sec	condary Indicators (	minimum of two required)	
Primary Indicators (minimu	m of one is requ	ired; check a	all that apply)			Surface Soil Crack	s (B6)	
Surface Water (A1)		Aquat	ic Fauna (B13)			Sparsely Vegetate	d Concave Surface (B8)	
High Water Table (A2)		Marl D	eposits (B15) <b>(L</b>	.RR U)		Drainage Patterns	(B10)	
Saturation (A3)		Hydro	gen Sulfide Odo	r (C1)	(C1) Moss Trim Lines (B16)			
Water Marks (B1)		Oxidiz	ed Rhizospheres	s on Living Ro	bots (C3)	Dry-Season Water	Table (C2)	
Drift Deposits (B2)	.)	Prese	nce of Reduced	in Tilled Soils		Saturation Visible	co) on Aerial Imageny (CO)	
Algal Mat or Crust (B4)		Thin M	Auck Surface (C7	7)	s (CO)	Geomorphic Positi	on (D2)	
Iron Deposits (B5)		Other	(Explain in Rema	, arks)		Shallow Aquitard (	D3)	
Inundation Visible on A	erial Imagery (E	37)	<b>、</b> •	,	x	FAC-Neutral Test	(D5)	
Water-Stained Leaves	(B9)					Sphagnum Moss (	D8) <b>(LRR T, U)</b>	
Field Observations:								
Surface Water Present?	Yes	No <u>X</u>	Depth (inches	):				
Water Table Present?	Yes	No <u>X</u>	Depth (inches	):				
Saturation Present?	Yes X	No	Depth (inches	): <u>18</u>	Wetland Hyd	rology Present?	Yes <u>No X</u>	
(Includes capillary fringe)	tream dauge m	onitoring we	l aerial photos	provious insp	ections) if availa	ble:		
Describe Recorded Data (3	tream gauge, m		ii, aenai priotos,					
Pomarka:								
Remarks.								

Sampling Point: WLC-OP2-UP

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test worksheet:
1. Chamaecyparis thyoides	50	Yes	OBL	Number of Dominant Species
2. Acer rubrum	20	Yes	FAC	That Are OBL, FACW, or FAC: (A)
3. Pinus rigida	10	No	FACU	Total Number of Dominant
4				Species Across All Strata: 5 (B)
5				Percent of Dominant Species
6.				That Are OBL, FACW, or FAC: 80.0% (A/B)
	80	=Total Cover		Prevalence Index worksheet:
50% of total cover: 4	0 20%	of total cover:	16	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 5 )				OBL species 50 x 1 = 50
1. Clethra alnifolia	60	Yes	FACW	FACW species $60   x 2 = 120$
2.	<b></b>			FAC species 25 x 3 = 75
3.				FACU species $15 \times 4 = 60$
4.				UPL species $0 \times 5 = 0$
5				Column Totals: 150 (A) 305 (B)
6				$\frac{1}{2} = \frac{1}{2} = \frac{1}$
	60	-Total Cover		Hydrophytic Vogetation Indicators:
50% of total power: 2	0 20%		10	1 Papid Toot for Hydrophytic Vegetation
Shruh Stratum (Diat aiza)	0 20%		12	1 - Rapid Test for Hydrophytic Vegetation
<u>Shrub Stratum</u> (Plot size. <u>5</u> )	-	N/s s	540	× 2 - Dominance Test is >50%
	5	Yes	FAC	$3 - Prevalence index is \leq 3.0^{\circ}$
2. Parthenocissus quinquefolia	5	Yes	FACU	Problematic Hydrophytic Vegetation' (Explain)
3				
4				
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6				present, unless disturbed or problematic.
	10	=Total Cover		Definitions of Five Vegetation Strata
				Deminions of the Vegenation of data.
50% of total cover:	5 20%	of total cover:	2	Tree – Woody plants, excluding woody vines,
50% of total cover:	5 20%	of total cover:	2	<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
50% of total cover: <u>Herb Stratum</u> (Plot size:) 1	5 20%	of total cover:	2	<b>Tree</b> – 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).
50% of total cover:	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines,</li> </ul>
50% of total cover:       50%         Herb Stratum       (Plot size:         1.	5 20%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less</li> </ul>
50% of total cover:       50%         Herb Stratum       (Plot size:       )         1.	5 20%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines,</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:         1.	5 20%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All berbaceous (non-woody) plants, including</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.          2.          3.	5 20%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       §         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       50% of total cover:         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:       5         Herb Stratum       (Plot size:       )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
50% of total cover:          Herb Stratum       (Plot size:      )         1.	520%	of total cover:	2	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> <li>Hydrophytic Vegetation</li> </ul>
50% of total cover:          Herb Stratum       (Plot size:      )         1.	520%	of total cover:	2	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

Profile Description: (Describe to the depth	needed to docum	ent the indica	ator or co	onfirm the	absence of in	dicators.)		
Depth Matrix	Redox F	Features	$\log^2$	Tox		Pomarka		
		70 Туре	LUC			Remarks		
0-4 10YR 3/3				Loamy/	Clayey	Loam		
4-510YR 5/3				Loamy/	Clayey	Loam with some sand		
5-20 10YR 5/3				Sar	ndy	Fine sand		
				1				
<sup>1</sup> Type: C=Concentration D=Depletion RM=R	educed Matrix MS	-Masked San	Grains	2	Location: PL =	Pore Lining M-Matrix		
Hydric Soil Indicators: (Applicable to all LR	Rs, unless otherv	vise noted.)		I	ndicators for F	Problematic Hydric Soils <sup>3</sup> :		
Histosol (A1)	Thin Dark Surf	ace (S9) <b>(LRR</b>	S, T, U)		1 cm Muck	(A9) <b>(LRR O)</b>		
Histic Epipedon (A2)	Barrier Islands	1 cm Muck (S	12)	-	2 cm Muck	(A10) (LRR S)		
Black Histic (A3)		3, 153D)			e Redox (A16)			
Hydrogen Sulfide (A4)	Loamy Mucky	Mineral (F1) <b>(L</b>	RR O)	(outside MLRA 150A)				
Stratified Layers (A5)	Loamy Gleyed	Matrix (F2)	-		Reduced Ve	ertic (F18)		
Organic Bodies (A6) (LRR P, T, U)	Depleted Matri	x (F3)			(outside l	MLRA 150A, 150B)		
5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark Su	Irface (F6)			Piedmont Fl	oodplain Soils (F19) (LRR P, T)		
Muck Presence (A8) (LRR U)	Depleted Dark	Surface (F7)		-	Anomalous	Bright Floodplain Soils (F20)		
1 cm Muck (A9) <b>(LRR P, T)</b>	Redox Depres	sions (F8)		-		33B)		
Depleted Below Dark Surface (A11)	 Marl (F10) <b>(LR</b>	RU)			Red Parent	Material (F21)		
Thick Dark Surface (A12)	Depleted Ochr	, ic (F11) <b>(MLR</b>	A 151)	-	Very Shallo	w Dark Surface (F22)		
Coast Prairie Redox (A16) (MLRA 150A)	Iron-Manganes	e Masses (F1)	2) (LRR (	, Р, Т) —	(outside l	MLRA 138, 152A in FL, 154)		
Sandy Mucky Mineral (S1) (LRR O, S)	Umbric Surface	e (F13) <b>(LRR F</b>	, T, U)		Barrier Islan	ds Low Chroma Matrix (TS7)		
Sandy Gleyed Matrix (S4)	Delta Ochric (F	17) (MLRA 15	1)	_		i3B, 153D)		
Sandy Redox (S5)	Reduced Verti	c (F18) <b>(MLRA</b>	150A, 15	50B)	Other (Expla	ain in Remarks)		
Stripped Matrix (S6)	Piedmont Floo	dplain Soils (F	19) <b>(MLR</b>	A 149A)		·		
Dark Surface (S7) (LRR P, S, T, U)	Anomalous Bri	ght Floodplain	Soils (F2	20)				
Polyvalue Below Surface (S8)	(MLRA 1494	, 153C, 153D)			<sup>3</sup> Indicators of	of hydrophytic vegetation and		
(LRR S, T, U)	S, T, U) Very Shallow Dark Surface (F22)				wetland hydrology must be preser			
-	(MLRA 138,	152A in FL, 1	54)		unless di	sturbed or problematic.		
Restrictive Layer (if observed):								
Туре:								
Depth (inches):				Hydric	Soil Present?	Yes No X		
Remarks:				1				

U.S. Army Corps WETLAND DETERMINATION DATA SHEET See ERDC/EL TR-10-20; the prop	s of Engineers – Atlantic and Gulf Coastal Plain Reg ponent agency is CECW-CO-R	Jion OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
Project/Site: Orsted	City/County: Ocean	Sampling Date: 5/6/2022
Applicant/Owner: Orsted	, ,	State: NJ Sampling Point: WLC-OP1-WET
Investigator(s): DV SS SK	Section Township Range	Ocean Two
Landform (billeide terrace etc.): Bottom of slope		
Subrogion (LPB or MLPA): LPB T		, none) Oope (70)
Soil Man Unit Name: Manahaukin Music 0.20( clana	traguently flooded	
Soli Map Onit Name. Mananawkin Muck, 0-2% slope	e, frequentity hooded	NWI classification. PF04Eg/ PF04/1C
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, e	xplain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	nap showing sampling point locat	tions, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area	
Hydric Soil Present? Yes	No within a Wetland?	Yes <u>X</u> No
Wetland Hydrology Present? Yes	< No	
HYDROLOGY		
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; cheat         Surface Water (A1)      Aq         X       High Water Table (A2)       Ma         X       Saturation (A3)       X       Hydrology         X       Water Marks (B1)      OX      OX         Sediment Deposits (B2)      Pre      Pre         Drift Deposits (B3)	ck all that apply) uatic Fauna (B13) Irl Deposits (B15) <b>(LRR U)</b> drogen Sulfide Odor (C1) idized Rhizospheres on Living Roots (C3) esence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) her (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)
Surface Water Present? Yes No	C Depth (inches):	
Water Table Present? Yes X No	Depth (inches):10	
Saturation Present? Yes X No	Depth (inches): 4 Wetland	I Hydrology Present? Yes X No
(Includes capillary fringe)	well parial photos, provious inspections), if	available:
Describe Recorded Data (Stream gauge, monitoring	weil, aenai photos, previous inspections), in	avaliable.
Remarks:		

Sampling Point: WLC-OP1-WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test worksheet:
1. Pinus rigida	40	Yes	FACU	Number of Dominant Species
2. Acer rubrum	30	Yes	FAC	That Are OBL, FACW, or FAC: 3 (A)
3				Total Number of Dominant
4				Species Across All Strata: 4 (B)
5.				Percent of Dominant Species
6.				That Are OBL, FACW, or FAC: 75.0% (A/B)
	70	=Total Cover		Prevalence Index worksheet:
50% of total cover:	35 20%	of total cover:	14	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 5 )				OBL species $0$ $x 1 = 0$
1. Clethra alnifolia	60	Yes	FACW	FACW species 90 $x^2 = 180$
2 llex dabra	30	Yes	FACW	FAC species $30 \times 3 = 90$
3				$\frac{1}{100} = \frac{1}{100} = \frac{1}{100}$
3				$\frac{1}{100} \frac{1}{100} \frac{1}$
4				$\begin{array}{c} \text{OFL species} \\ \text{OFL species} \\ \text{Orbits} \\ \text{OFL species} \\ OF$
5				Column Totals: $160$ (A) $430$ (B)
6.				Prevalence Index = B/A =
	90	=Total Cover		Hydrophytic Vegetation Indicators:
50% of total cover:	45 20%	of total cover:	18	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)				X 2 - Dominance Test is >50%
1				X_3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.				
4				
5				1
6				'Indicators of hydric soil and wetland hydrology must be
····		Total Covar		Definitions of Five Vegetation Strate:
				Deminions of Five vegetation Strata.
50% of total cover:	20%	of total cover:		<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)				(7.6 cm) or larger in diameter at breast height (DBH)
1				
2.				Sapling – Woody plants, excluding woody vines,
3.				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5				Shrub - Woody Plants, excluding woody vines,
6.				approximately 3 to 20 ft (1 to 6 m) in height.
7.				Herb All berbasseus (non weedy) plants including
8.				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				ft (1 m) in height.
11				Woody Vine – All woody vines, regardless of height
· · · · · · · · · · · · · · · · · · ·				
		= I otal Cover		
50% of total cover:	20%	of total cover:		
Woody Vine Stratum (Plot size:)				
1				
2.				
3.				
4.				
5.				I history hat is
		=Total Cover		nyaropnytic Vegetation
50% of total cover	20%	of total cover:		Present? Yes X No
Remarke: (If observed list morphological adapted)				

Color (moist)         %         Color (moist)         %         Type!         Loc <sup>2</sup> Texture         Remarks           0-6         5YR 4/2	Depth Matrix	n needed to docu Redo	u <b>ment tr</b> x Featur	ne indica es	itor or c	onfirm the absend	ce of indicators.)	
0-6       SYR 4/2       Mucky Learn/Clay       Peaty learn         6-20       2.5YR 5/1       Muck       Organic muck         6-20       2.5YR 5/1       Muck       Organic muck         "Type:       C-Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location:       PL=Pore Lining, M=Matrix.         "Type:       C-Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location:       PL=Pore Lining, M=Matrix.         "Hydric Soil Indicators:       (Applicable to all LRRs, unless ontherwise noted.)       Indicators for Problematic Hydric Soils?         Histics Epideon (A2)       Barrier Islands. 1 cm Muck (S12)       2 cm Muck (A9) (LRR P)       1 cm Muck (A9) (LRR P)         Organic Bodies (A6)       LCRP, T, U)       Depleted Matrix (F3)       Coast Prairie Redox (A16)       (outside MLRA 150A)         Stratief Layers (A5)       Loarny Gleyed Matrix (F2)       Pleidmont Floodplain Soils (F19) (LRR P)       Red Parent Material (F21)         Organic Bodies (A6) (LRR P, T, U)       Red value (A11)       Mat (F10) (LRR U)       Pleidmont Floodplain Soils (F20)         Depleted Below Dark Surface (A12)       Depleted Chric (F11) (MLRA 150)       Red Parent Material (F21)       Outside MLRA 138, 152A in FL, 154         Sardy Gleyed Matrix (S6)       Pleidmont Floodplain Soils (F20)       (MLRA 1538, 153D)       Other (Explain in Remarks) <th>(inches) Color (moist) %</th> <th>Color (moist)</th> <th>%</th> <th>Type<sup>1</sup></th> <th>Loc<sup>2</sup></th> <th>Texture</th> <th>Remarks</th> <th></th>	(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
6-20       2.5YR 5/1       Muck       Organic muck         ************************************	0-6 5YR 4/2					Mucky Loam/Cla	ay Peaty loam	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>1</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)          Indicators for Problematic Hydric Soils <sup>2</sup> :         1 om Muck (30) (LRR N, U)           Indicators for Problematic Hydric Soils <sup>2</sup> :         1 om Muck (40) (LRR N)          Histosol (A1)          Thin Dark Surface (S9) (LRR S, T, U)           I om Muck (A0) (LRR N)           1 om Muck (A0) (LRR N)          Black Histic (A3)          (MLRA 1538, 153D)           Coast Prairie Redox (A16)         (outside MLRA 150A)          Organic Bodies (A6) (LRR P, T, U)       Redox Dark Surface (F6)           Redox Depleted Dark Surface (F7)           Redox Depleted Dark Surface (F7)          1 om Muck (A9) (LRR P, T)        Depleted Matrix (F3)           Red Parent Material (F21)           Very Shallow Dark Surface (F22)         (Outside MLRA 138), 153D)          1 const Praine Redox (A12)           Depleted Dark Surface (F13) (LRR A 150A, 150A)           Red Parent Material (F21)          1 const Praine Redox (S16)           Reduced Vertic (F18) (MLRA 150A, 150A)           Outside MLRA 138, 152A In FL, 154          1 const Praine Redox (S16)           Reduced Vertic (F10) (MLRA 150A, 150D)           Outside MLRA 138, 152A In FL, 154	6-20 2.5YR 5/1					Muck	Organic muck	
<sup>1</sup> Type: C.=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)								
"Type: C-Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Thin Dark Surface (S9) (LRR S, T, U)       1 cm Muck (A9) (LRR Q)         Black Histis (A3)       (MLRA 1538, 153D)       Coast Prairie Redox (A16)         Organic Boiles (A6) (LRR P, T, U)       Depleted Matrix (F2)       Reduced Vertic (F18)         Organic Boilow Dark Surface (A11)       Matri (F10) (LRR Q)       Reduced Vertic (F18)         Depleted Dark Surface (A12)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       Reduced Vertic (F11)         Depleted Dark Surface (A12)       Depleted Dark Surface (F12) (LRR O, P, T)       Goutside MLRA 150A, 150B)         Sandy Mucky Mineral (S1)       Umbric Surface (F12) (LRR O, P, T)       Barrier Islands Low Chroma Matrix (TS7)         Sandy Mucky Mineral (S1)       Matri (F10) (LRR N, T)       Barrier Islands Low Chroma Matrix (TS7)         Sandy Mucky Mineral (S1)       Reduced Vertic (F17) (MLRA 151)       Barrier Islands Low Chroma Matrix (TS7)         Sandy Mucky Mineral (S1)       Reduced Vertic (F19) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Predmont Floodplain S								
Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location:       PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histosol (A1)       Thin Dark Surface (S9) (LRR S, T, U)       1 cm Muck (A9) (LRR O)         Histosol (A2)       Barrier Islands 1 cm Muck (S12)       2 cm Muck (A10) (LRR S)         Black Histo (A3)       (MLRA 1538, 1530)       Coast Prairie Redox (A16)         Organic Bodies (A6) (LRR P, T, U)       Redox Dark Surface (F6)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T)       Redox Dark Surface (F6)       Pledmont Floodplain Soils (F19) (LRR F)         Depleted Bark Surface (F11)       Mark (F10) (LRR V)       Redox Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Ion-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (MLRA 150A, 150B)       Barrier Islands 1 cm Functore (S10)         Stripped Matrix (S6)       Deleted Ochric (F13) (MLRA 150A, 150B)       Deleted Ochric (F13) (MLRA 150A, 150B)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F20)       (MLRA 153B, 152D)         Polyvalue Below Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soil								
<sup>1</sup> Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location:       PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histos O(A1)       Thin Dark Surface (S9) (LRR S, T, U)       1 cm Muck (A9) (LRR O)         Black Histic (A3)       (MLRA 1538, 1530)       Coast Praine Redox (A16)         X Hydrogen Suffide (A4)       Loamy Mucky Mineral (F1) (LRR O)       (outside MLRA 150A)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       (outside MLRA 150A) Soils (F20)         f cm Muck (A9) (LRR P, T)       Redox Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         Muck Presence (A8) (LRR V)       Depleted Dark Surface (F1) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A15)       Marl (F10) (LRR V)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A55)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Sandy Bueyed Matrix (S4)       Delta Ochric (F17) (MLRA 150A, 150B)       Other (Explain in Remarks)         Sandy Redox (S5)       Reduced Vertic (F1		<u> </u>						
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Thin Dark Surface (S9) (LRR S, T, U)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Thin Dark Surface (S9) (LRR O, 1)       2 cm Muck (A0) (LRR O)         Black Histic (A3)       (MLRA 153B, 153D)       Coast Prairie Redox (A16)         X Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F         Muck Presence (A8) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Mart (F10) (LRR V)       Piedmont Floodplain Soils (F20)         Trick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prainie Redox (A16)       Ithen Anganese Masses (F12) (LRR O, P, T)       Barrier Islands Low Chroma Matrix (TS7         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont F								
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix. <ul> <li>Indicators (Applicable to all LRRs, unless otherwise noted.)</li> <li>Histosol (A1)</li> <li>Thin Dark Surface (S9) (LRR S, T, U)</li> <li>Barker Islands 1 cm Muck (S12)</li> <li>2 cm Muck (A10) (LRR S)</li> <li>Black Histic (A3)</li> <li>(MLRA 153B, 153D)</li> <li>Coast Prairie Redox (A16)</li> <li>(outside MLRA 150A)</li> <li>Stratified Layers (A5)</li> <li>Loarny Mucky Mineral (F1) (LRR O)</li> <li>S cm Mucky Mineral (A7) (LRR P, T, U)</li> <li>Redox Dark Surface (F6)</li> <li>Piedmont Floodplain Soils (F19) (LRR F)</li> <li>Goast Prairie Redox (A16)</li> <li>(outside MLRA 150A)</li> <li>Redox Depressions (F8)</li> <li>Coast Prairie Redox (A16) (MLRA 150B)</li> <li>Piedmont Floodplain Soils (F19) (LRR F)</li> <li>Depleted Dark Surface (F7)</li> <li>Anomalous Bright Floodplain Soils (F19) (LRR F)</li> <li>Coast Prairie Redox (A16) (MLRA 150A)</li> <li>Iron-Manganese Masses (F12) (LRR O, P, T)</li> <li>Goast Prairie Redox (A16) (MLRA 150A)</li> <li>Iron-Manganese Masses (F12) (LRR O, P, T)</li> <li>Guatside MLRA 153B, 152A in FL, 154</li> <li>Coast Prairie Islands Low Chroma Matrix (T57)</li> <li>Sandy Gleyed Matrix (S4)</li> <li>Deleted Ochric (F17) (MLRA 150A, 150B)</li> <li>Stripped Matrix (S6)</li> <li>Piedmont Floodplain Soils (F20)</li> <li>Polyvalue Below Surface (S3)</li> <li>Mark (F10) (LRR P, T, U)</li> <li>Anomalous Bright Floodplain Soils (F20)</li> <li>Other (Explain in Remarks)</li></ul>								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Thin Dark Surface (S9) (LRR S, T, U)       Dearier Islands 1 cm Muck (S12)       1 cm Muck (A9) (LRR O)         Histosol (A2)       Barcier Islands 1 cm Muck (S12)       2 cm Muck (A10) (LRR S)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR O)       Coast Prairie Redox (A16)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       Coustide MLRA 150A)         for Muck Presence (A8) (LRR P, T, U)       Redox Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         for Muck V Mineral (A1)       Marl (F10) (LRR U)       Peleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       Gustide MLRA 138, 152A in FL, 154         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (MLRA 150A)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Anomalous Bright Floodplain Soils (F20)         Gast Prairie Redox (A16)       Mark (F10) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (T57)         Sandy Meedox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Expla	Type: C=Concentration, D=Depletion, RM=F	Reduced Matrix, M	/IS=Masl	ked Sand	Grains.	<sup>2</sup> Location	n: PL=Pore Lining, M=Matrix.	
Histosol (A1)       Thin Dark Surface (S9) (LRR S, T, U)       1 cm Muck (A9) (LRR O)         Histic Epipedon (A2)       Barrier Islands 1 cm Muck (S12)       2 cm Muck (A9) (LRR O)         Black Histic (A3)       (MLRA 1538, 153D)       Coast Prairie Redox (A16)         X Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR O)       (outside MLRA 150A)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       (outside MLRA 150A, 150B)         5 cm Mucky Mineral (A7) (LRR P, T, U)       Depleted Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F)         Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 0, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Other (Explain in Remarks)         Stripped Matrix (S6)       (MLRA 149A, 153C, 153D) <sup>3</sup> Indicators of hydrophytic vege	Hydric Soil Indicators: (Applicable to all Li	RRs, unless othe	erwise n	oted.)		Indicato	ors for Problematic Hydric So	ils <sup>3</sup> :
Histic Epipedon (A2)       Barrier Islands 1 cm Muck (S12)       2 cm Muck (A10) (LRR S)         Black Histic (A3)       (MLRA 153B, 153D)       Coast Prairie Redox (A16)         X Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR O)       (outside MLRA 150A)         Stratified Layers (A5)       Loamy Gleyed Matrix (F3)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F         Muck Presence (A8) (LRR U)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (ILRR A 150A, 150B)       Deleted Ochric (F17) (MLRA 150A, 150B)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Otter (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 150A, 150B) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbe	Histosol (A1)	Thin Dark Su	urface (S	89) <b>(LRR</b>	S, T, U)	1 cm	n Muck (A9) <b>(LRR O)</b>	
Black Histic (A3)       (MLRA 153B, 153D)       Coast Prairie Redox (A16)         X Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR 0)       (outside MLRA 150A)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       (outside MLRA 150A, 150B)         5 cm Mucky Mineral (A7) (LRR P, T, U)       Redox Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F)         Muck Presence (A8) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154         Sandy Gleyed Matrix (S4)       Delta Ochric (F13) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)         Anomalous Bright Floodplain Soils (F20)       MultRA 138, 152A in FL, 154)         Polyvalue Below Surface (S8)       (MLRA 138, 152A in FL, 154)         Mutrix 165, Type:	Histic Epipedon (A2)	Barrier Islan	ds 1 cm	Muck (S	12)	2 cm	n Muck (A10) <b>(LRR S)</b>	
X       Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR O)       (outside MLRA 150A)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F2)       Reduced Vertic (F18)         5 om Mucky Mineral (A7) (LRR P, T, U)       Redox Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F         Muck Presence (A8) (LRR U)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         1 om Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 151)       Wurk A 153B, 153D)       Barrier Islands Low Chroma Matrix (T57)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F20)       Murk A 149A, 153C, 153D) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):	Black Histic (A3)	(MLRA 15	3B, 153	D)		Coa	ast Prairie Redox (A16)	
Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Reduced Vertic (F18)         Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       (outside MLRA 150A, 150B)         5 cm Mucky Mineral (A7) (LRR P, T, U)       Redox Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR P         Muck Presence (A8) (LRR P, T)       Redox Depressions (F8)       Anomalous Bright Floodplain Soils (F20)         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       Red Parent Material (F21)         Depleted Below Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (T57)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F20)       Other (Explain in Remarks)         Polyvalue Below Surface (S8)       (MLRA 138, 152A in FL, 154) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	X Hydrogen Sulfide (A4)	Loamy Muck	ky Minera	al (F1) <b>(L</b>	RR O)	(0	outside MLRA 150A)	
Organic Bodies (A6) (LRR P, T, U)       Depleted Matrix (F3)       (outside MLRA 150A, 150B)         5 cm Mucky Mineral (A7) (LRR P, T, U)       Redox Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F         Muck Presence (A8) (LRR U)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20)         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Coast Prairie Redox (A16) (MLRA 150A)       Iton-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 151)       (MLRA 153B, 153D)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)         Anomalous Bright Floodplain Soils (F20)       (MLRA 138, 152A in FL, 154)         Polyvalue Below Surface (S8)       (MLRA 138, 152A in FL, 154)         Query Shallow Dark Surface (S8)       (MLRA 138, 152A in FL, 154)         Restrictive Layer (if observed):       Type:         Type:	Stratified Layers (A5)	Loamy Gleye	ed Matrix	k (F2)		Red	luced Vertic (F18)	
5 cm Mucky Mineral (A7) (LRR P, T, U)       Redox Dark Surface (F6)       Piedmont Floodplain Soils (F19) (LRR F         Muck Presence (A8) (LRR U)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F17) (MLRA 151)       Barrier Islands Low Chroma Matrix (TS7         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F20)       Other (Explain in Remarks)         Polyvalue Below Surface (S8)       (MLRA 149A, 153C, 153D) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	Organic Bodies (A6) (LRR P, T, U)	Depleted Ma	atrix (F3)			(0	utside MLRA 150A, 150B)	
Muck Presence (A8) (LRR U)       Depleted Dark Surface (F7)       Anomalous Bright Floodplain Soils (F20         1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (MLRA 150A, 150B)       Barrier Islands Low Chroma Matrix (TS7         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F20)       Other (Explain in Remarks)         Polyvalue Below Surface (S8)       (MLRA 149A, 153C, 153D) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark	Surface	(F6)		Pied	dmont Floodplain Soils (F19) <b>(L</b>	RR P, T)
1 cm Muck (A9) (LRR P, T)       Redox Depressions (F8)       (MLRA 153B)         Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Dark Surface (S7) (LRR P, S, T, U)         Anomalous Bright Floodplain Soils (F20)       MLRA 138, 152A in FL, 154       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic."         Restrictive Layer (if observed):       Type:	Muck Presence (A8) (LRR U)	Depleted Da	rk Surfa	ce (F7)		Ano	omalous Bright Floodplain Soils	(F20)
Depleted Below Dark Surface (A11)       Marl (F10) (LRR U)       Red Parent Material (F21)         Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7)         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20)         Polyvalue Below Surface (S8)       (MLRA 138, 152A in FL, 154)         (LRR S, T, U)       Very Shallow Dark Surface (F22)         Upeth (inches):       (mLRA 138, 152A in FL, 154)         Depth (inches):       Hydric Soil Present?       Yes X         Organic material/ leaf litter 3"       Organic material/ leaf litter 3"	1 cm Muck (A9) (LRR P, T)	Redox Depre	essions (	(F8)		(M	/LRA 153B)	
Thick Dark Surface (A12)       Depleted Ochric (F11) (MLRA 151)       Very Shallow Dark Surface (F22)         Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Other (Explain in Remarks)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20)       Other (Explain in Remarks)         Polyvalue Below Surface (S8)       (MLRA 149A, 153C, 153D) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	Depleted Below Dark Surface (A11)	Marl (F10) (L	_RR U)			Red	Parent Material (F21)	
Coast Prairie Redox (A16) (MLRA 150A)       Iron-Manganese Masses (F12) (LRR O, P, T)       (outside MLRA 138, 152A in FL, 154)         Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 151)       (MLRA 153B, 153D)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Other (Explain in Remarks)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20)       Micators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	Thick Dark Surface (A12)	Depleted Oc	hric (F1	1) (MLR/	A 151)	Very	y Shallow Dark Surface (F22)	
Sandy Mucky Mineral (S1) (LRR O, S)       Umbric Surface (F13) (LRR P, T, U)       Barrier Islands Low Chroma Matrix (TS7         Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 151)       (MLRA 153B, 153D)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Other (Explain in Remarks)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, (MLRA 149A, 153C, 153D)         Very Shallow Dark Surface (F22)       wetland hydrology must be present, (MLRA 138, 152A in FL, 154)       unless disturbed or problematic.         Restrictive Layer (if observed):       Type:	Coast Prairie Redox (A16) (MLRA 150A)	Iron-Mangan	iese Mas	sses (F1	2) (LRR	O, P, T) (0	outside MLRA 138, 152A in FL	, 154)
Sandy Gleyed Matrix (S4)       Delta Ochric (F17) (MLRA 151)       (MLRA 153B, 153D)         Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)       Other (Explain in Remarks)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20)       Other of the present, wetland hydrology must be present, wetland hydrology must be present, (MLRA 138, 152A in FL, 154)         Restrictive Layer (if observed):       Type:       Hydric Soil Present?       Yes X       No         Remarks:       Organic material/ leaf litter 3"       Organic material/ leaf litter 3"       Other (S1)       No	Sandy Mucky Mineral (S1) (LRR O, S)	Umbric Surfa	ace (F13	) (LRR F	, T. U)	Barr	rier Islands Low Chroma Matrix	(TS7)
Sandy Redox (S5)       Reduced Vertic (F18) (MLRA 150A, 150B)       Other (Explain in Remarks)         Stripped Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 149A)         Dark Surface (S7) (LRR P, S, T, U)       Anomalous Bright Floodplain Soils (F20)         Polyvalue Below Surface (S8)       (MLRA 149A, 153C, 153D)         (LRR S, T, U)       Very Shallow Dark Surface (F22)         Wetland hydrology must be present, (MLRA 138, 152A in FL, 154)       unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Depth (inches):       Hydric Soil Present?       Yes_X         Remarks:       Organic material/ leaf litter 3"	Sandy Gleved Matrix (S4)	Delta Ochric	(F17) <b>(</b>	/ N MLRA 15	1)	(M	/LRA 153B. 153D)	( - )
Stripped Matrix (S6)	Sandy Redox (S5)	Reduced Ve	rtic (F18	) (MLRA	150A. 1	50B) Othe	er (Explain in Remarks)	
Composed matrix (GO)       Indication in Hodeptain Hodep	Stripped Matrix (S6)	Piedmont Fl	nodolain	Soils (F	19) <b>(MI F</b>	CC_) CΔ 149Δ)		
Dark Gunade (G/) (LRCT, 5, 7, 0)	Dark Surface (S7) (I PP P S T II)		Bright Fl		Soile (E	20)		
Indicators of Hydrophytic Vegetation and (MERA 149A, 1350, 1350)       Indicators of Hydrophytic Vegetation and (MERA 139A, 1350, 1350)         (LRR S, T, U)	Polyvalue Below Surface (S8)		0A 153	ר 153D	00113 (1 2	<sup>3</sup> Indi	licators of hydrophytic vegetatio	n and
(MLRA 138, 152A in FL, 154)     unless disturbed or problematic.       Restrictive Layer (if observed):			v Dark S	urfaco (E	22)	in cu	votland bydrology must be pros	nanu
Restrictive Layer (if observed):     Type:	(LKK 3, 1, 0)		0 152A		22) 54)	vv	periand hydrology must be prese	5111,
Restrictive Layer (if observed):       Type:         Type:		(WILKA IS	0, IJZA	III FL, 1	94)	T	Thess disturbed of problematic.	
Type:	Restrictive Layer (if observed):							
Depth (inches): Hydric Soil Present? Yes X No Remarks: Organic material/ leaf litter 3"								
Remarks: Organic material/ leaf litter 3"	Depth (inches):					Hydric Soil Pro	esent? Yes X No	
Organic material/ leaf litter 3"	Remarks:							
	Organic material/ leaf litter 3"							

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and See ERDC/EL TR-10-20; the proponent agency	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)	
Project/Site: Orsted	City/County: Ocean	Sampling Date: 5/6/2022
Applicant/Owner: Orsted		State: NJ Sampling Point: WLD-OP1-UP
Investigator(s): SS. DV. SK	Section, Township, Range: Oc	
Landform (billside terrace etc.): top of slope	cal relief (concave, convex, none	a): Slope (%): 0-2
Subregion (LRB or MLRA): LRB T		Datum:
Soil Man Linit Name: Manahawkin Muck 0-2% slopes, frequently flood	Long	
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes <u>X</u> r	No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly di	sturbed? Are "Normal Circu	mstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally probl	ematic? (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         Hydric Soil Present?       Yes       No       X         Wetland Hydrology Present?       Yes       No       X         Remarks:       Ket State       Ket State       Ket State	Is the Sampled Area within a Wetland?	Yes NoX
HYDROLOGY		
Water d Hydrology Indiantera		conden (Indicators (minimum of two required)
Primary Indicators (minimum of one is required: check all that apply)	<u>500</u>	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15)	(LRR U)	Drainage Patterns (B10)
Saturation (A3) Hydrogen Sulfide Oc	dor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizosphere	res on Living Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduce	d Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction	on in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Algai Mat of Crust (B4) Thin Muck Surface (	C7) marks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	X	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	<u></u>	Sphagnum Moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes No X Depth (inch	es):	
Water Table Present? Yes No X Depth (inch	es):	
Saturation Present? Yes No X Depth (inch	es): Wetland Hyd	rology Present? Yes No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos	s, previous inspections), if availa	ble:
Remarks:		

Sampling Point: WLD-OP1-UP

	Absolute Dom	inant Indicator	
Tree Stratum (Plot size: 30 )	% Cover Spe	cies? Status	Dominance Test worksheet:
1. Chamaecyparis thyoides	50 Y	es OBL	Number of Dominant Species
2. Pinus rigida	20 Y	es FACU	That Are OBL, FACW, or FAC: 3 (A)
3. Acer rubrum	10	To FAC	Total Number of Device out
4		<u> </u>	I otal Number of Dominant Species Across All Strata: 5 (B)
5	·		Percent of Dominant Species
6			That Are OBL, FACW, or FAC: 60.0% (A/B)
	80 =Total	Cover	Prevalence Index worksheet:
50% of total cover: 4	0 20% of tota	l cover: 16	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 5)			OBL species 80 x 1 = 80
1. Chamaecyparis thyoides	30 Y	es OBL	FACW species 10 x 2 = 20
2. Ilex opaca	5 N	lo FAC	FAC species $15 \times 3 = 45$
3. Clethra alnifolia	10 Y	es FACW	FACU species 30 x 4 = 120
4			UPL species $0 \times 5 = 0$
5			$\begin{array}{c} Column Totals: 135 (A) \\ \end{array} $
· · · · · · · · · · · · · · · · · · ·			$\frac{1}{200} (A) = \frac{1}{200} (B)$
0			Prevalence index = B/A = 1.96
	45 =Total	Cover	Hydrophytic Vegetation Indicators:
50% of total cover: 2	3 20% of tota	l cover: 9	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 5)			X 2 - Dominance Test is >50%
1. Mitchella repens	10 Y	es FACU	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.			
4	· · · · · · · · · · · · · · · · · · ·		
5			1
5			'Indicators of hydric soil and wetland hydrology must be
0.			present, unless disturbed of problematic.
	<u>10</u> =1 otal	Cover	Definitions of Five Vegetation Strata:
50% of total cover: 5	5 20% of tota	l cover: 2	<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)			approximately 20 ft (6 m) or more in height and 3 in.
1			(7.6 cm) or larger in diameter at breast height (DBH).
2.			Sapling – Woody plants, excluding woody vines,
3.			approximately 20 ft (6 m) or more in height and less
4			than 3 in. (7.6 cm) DBH.
5			Shrub - Woody Plants, excluding woody vines
5	<u> </u>		approximately 3 to 20 ft (1 to 6 m) in height
b	<u> </u>		
7			Herb – All herbaceous (non-woody) plants, including
8			herbaceous vines, regardless of size, and woody
9			plants, except woody vines, less than approximately 3
10			
11.			Woody Vine – All woody vines, regardless of height.
	=Total	Cover	
50% of total cover	20% of tota	l cover	
Weady Vine Stratum (Plat size:	2070 01 1010		
1	<u> </u>		
2.			
3.			
4			
5			Hydrophytic
	=Total	Cover	Vegetation
50% of total cover:	20% of tota	l cover:	Present? Yes X No
Remarks: (If observed list morphological adaptation	s below )		
i romano. In observeu, nor morphological adaptation	13 DEIOW.)		

Profile Desc	ription: (Describe to	the depth	n needed to doci	ument the i	ndicat	or or co	onfirm th	e absence of in	dicators.)		
Depth	Matrix		Redo	x Features	1	2					
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Ty	/pe'	Loc <sup>2</sup>	Te	exture	Re	emarks	
0-3	7.5YR 3/2	100					Loam	Loamy/Clayey loam with		h organ	ic top
3-20	2.5YR 6/6	100					S	andy	sand with	10% pe	ebbles
											<u> </u>
<sup>1</sup> Type: C=Co	ncentration, D=Deple	tion, RM=F	Reduced Matrix, N	//S=Masked	Sand	Grains.		<sup>2</sup> Location: PL=F	Pore Lining, N	1=Matrix	
Hydric Soil I	ndicators: (Applicab	le to all Li	RRs, unless othe	erwise note	d.)			Indicators for F	roblematic I	Hydric S	Soils <sup>3</sup> :
Histosol (	A1)		Thin Dark S	urface (S9) <b>(</b>	LRR S	5, T, U)		1 cm Muck	(A9) <b>(LRR O)</b>		
Histic Ep	pedon (A2)		Barrier Islan	ds 1 cm Muo	ck (S12	2)		2 cm Muck	(A10) <b>(LRR S</b>	5)	
Black His	tic (A3)		(MLRA 15	3B, 153D)				Coast Prairi	e Redox (A16	5)	
Hydroger	n Sulfide (A4)		Loamy Muck	ky Mineral (F	1) <b>(LR</b>	R 0)		(outside l	MLRA 150A)		
Stratified	Layers (A5)		Loamy Gley	ed Matrix (F2	2)			Reduced Ve	ertic (F18)		
Organic E	Bodies (A6) <b>(LRR P, 1</b>	「, U)	Depleted Ma	atrix (F3)				(outside l	MLRA 150A,	150B)	
5 cm Mu	cky Mineral (A7) (LRR	P, T, U)	Redox Dark	Surface (F6	)			Piedmont F	oodplain Soil	s (F19)	(LRR P, T)
Muck Pre	sence (A8) (LRR U)	-	Depleted Da	rk Surface (	F7)			Anomalous	Bright Floodp	lain Soi	ils (F20)
1 cm Mu	ck (A9) <b>(LRR P, T)</b>		Redox Depre	essions (F8)				(MLRA 15	3B)		
Depleted	Below Dark Surface	(A11)	Marl (F10) (I	LRR U)				Red Parent	Material (F21	)	
Thick Da	rk Surface (A12)	· · ·	Depleted Oc	hric (F11) <b>(N</b>	MLRA	151)		Very Shallo	w Dark Surfa	, ce (F22)	)
Coast Pra	airie Redox (A16) ( <b>ML</b>	.RA 150A)	Iron-Mangar	nese Masses	s (F12)	(LRR C	), P, T)	(outside l	MLRA 138, 1	52A in F	FL, 154)
Sandy M	ucky Mineral (S1) (LR	R O, S)	Umbric Surfa	ace (F13) <b>(L</b>	RR P.	т. U)		Barrier Islar	ds Low Chro	ma Matr	rix (TS7)
Sandy Gl	eved Matrix (S4)		Delta Ochric	(F17) (MLR	A 151	)		(MLRA 15	3B. 153D)		( - )
Sandy Re	edox (S5)		Reduced Ve	ertic (F18) (N	ILRA 1	, 50A. 15	50B)	Other (Expl	ain in Remark	s)	
Stripped	Matrix (S6)		Piedmont Fl	oodplain Soi	ils (F19	)) (MLR	A 149A)			-,	
Dark Sur	ace (S7) <b>(I RR P. S</b> .	τ. υ)	Anomalous	Bright Flood	nlain S	oils (F2	0)				
Polyvalue	Below Surface (S8)	., .,	(MI RA 14	οιιο 19Δ 153C 1	53D)	0110 (1 2	0)	<sup>3</sup> Indicators of	of hydrophytic	veneta	tion and
			Very Shallov	v Dark Surfa	Ce (F2	2)		wetland h	vdrology mus	st he nre	sent
(2.0.0	, 1, 0)		(MLRA 13	88, 152A in F	FL, 154	4)		unless di	sturbed or pro	oblemati	ic.
Restrictive L	ayer (if observed):										
Type:											
Depth (in	ches):						Hydri	c Soil Present?	Yes	N	No <u>X</u>
Remarks:											
WETLAND DETERMIN See ERDC/E	OMB Control # Requirement (Authority: A	: 0710-0024, Exp: 1 Control Symbol EX R 335-15, paragrap	1/30/2024 (EMPT: h 5-2a)								
--	---	--	--------------------------------	--------------------------	------------------------	--------------------------	------------------------	-------------	--		
Project/Site: Orsted				City/Count	ty: Ocean		Sampling Date:	5/6/2022			
Applicant/Owner: Orste	Drsted					State: NJ	Sampling Point:	WLD-OP2-WET			
Investigator(s): SS DV SK	vestigator(s): SS,DV,SK Section, Township, Range:										
Landform (hillside, terrace, c	atc.): Depressi	an		l relief (conc	ave convex none		Slope (%):	0-2			
Cubrossion (LDD or MLDA);	Subregion (LRR or MLRA): LRR T Lat:							0-2			
Subregion (LRR of MLRA).		Lat			Long.		Datum.				
Soli Map Unit Name: Mana	nawkin muck 0-2	2% slopes fre	quently flooded				ition: PF04Cg				
Are climatic / hydrologic con	ditions on the sit	e typical for t	his time of year	?	Yes X	No (If no,	explain in Remark	s.)			
Are Vegetation, Soil	, or Hydro	ologys	significantly distu	urbed? A	re "Normal Circu	mstances" present	? Yes X	No			
Are Vegetation, Soil	, or Hydro	ologyr	naturally problem	natic? (I	f needed, explain	any answers in R	emarks.)				
SUMMARY OF FINDI	NGS – Attach	n site map	showing sa	mpling po	oint locations	s, transects, in	nportant featu	ires, etc.			
Hydrophytic Vegetation Pre Hydric Soil Present? Wetland Hydrology Presen	esent?	Yes X Yes X Yes X	No No No	Is the San within a W	npled Area Vetland?	Yes <u>X</u>	No				
Demarka:											
HYDROLOGY											
Wetland Hydrology Indica	ators:				Sec	condary Indicators	(minimum of two	required)			
Primary Indicators (minimu	m of one is requ	ired; check a	ll that apply)			Surface Soil Crac	ks (B6)				
Surface Water (A1)		Aquatio	c Fauna (B13)			Sparsely Vegetat	ed Concave Surfa	ce (B8)			
X High Water Table (A2)		Marl De	eposits (B15) <b>(L</b>	.RR U)		Drainage Pattern	s (B10)				
X Saturation (A3)		X Hydrog	jen Sulfide Odoi	r (C1)		Moss Trim Lines	(B16)				
Water Marks (B1)		Oxidize	ed Rhizospheres	s on Living Ro	oots (C3)	Dry-Season Wate	er Table (C2)				
Sediment Deposits (B2	.)	Presen	Ice of Reduced	in Tilled Soil		Crayfish Burrows	(C8)	(C0)			
Algal Mat or Crust (B4)		Recent	uck Surface (C7	in Tillea Soli 7)	S (C6)		tion (D2)	y (C9)			
Algal Mat of Crust (D4)		Other (	Explain in Rem	arks)		Geomorphic Position (D2)					
Inundation Visible on A	erial Imagery (B	7)			x	X FAC-Neutral Test (D5)					
X Water-Stained Leaves	(B9)	,				- Sphagnum Moss	(D8) <b>(LRR T, U)</b>				
Field Observations:											
Surface Water Present?	Yes	No X	Depth (inches	):							
Water Table Present?	Yes X	No	Depth (inches	): 1							
Saturation Present?	Yes X	No	Depth (inches	): 0	Wetland Hyd	rology Present?	Yes X	No			
(includes capillary fringe)											
Describe Recorded Data (s	tream gauge, mo	onitoring well	, aerial photos,	previous insp	ections), if availa	ible:					
Pemarks:											
Remarks.											

#### **VEGETATION (Five Strata)** – Use scientific names of plants.

Sampling Point: WLD-OP2-WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test worksheet:
1. Chamaecyparis thyoides	75	Yes	OBL	Number of Dominant Species
2. Pinus rigida	25	Yes	FACU	That Are OBL, FACW, or FAC: 4 (A)
3				
0. 				I otal Number of Dominant
4.				Species Across All Strata. 6 (B)
5		·		Percent of Dominant Species
6				That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
	100	=Total Cover		Prevalence Index worksheet:
50% of total cover: 5	20%	of total cover:	20	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: )				OBL species 80 x 1 = 80
1.				FACW species $30 \times 2 = 60$
2				FAC species 0 x 3 = 0
2.				
3.				FACO species $30$ $x = 120$
4.				UPL species $0   x 5 = 0$
5				Column Totals: 140 (A) 260 (B)
6.				Prevalence Index = B/A = 1.86
		=Total Cover		Hydrophytic Vegetation Indicators:
50% of total cover:	20%	of total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 5 )				X 2 - Dominance Test is >50%
	20	Vaa		$\frac{1}{2}$ 2 Bommanoc reaction 2007
		res		$\frac{1}{2}$ 3 - Prevalence index is $\leq 3.0$
2. Clethra alnifolia	10	Yes	FACW	Problematic Hydrophytic Vegetation <sup>*</sup> (Explain)
3				
4.				
5.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6.				present, unless disturbed or problematic.
	30	=Total Cover		Definitions of Five Vegetation Strata:
50% of total cover: 1	5 20%	of total actions	6	
	0 ZU/0	of total cover:	0	<b>Tree</b> — Woody plants, excluding woody vines
Herb Stratum (Plot size: 5 )	5 20%	or total cover:		<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5 )	<u> </u>	or total cover:		<b>Tree</b> – 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).
Herb Stratum (Plot size: 5 ) 1. Polygonatum biflorum	<u> </u>	Yes	FACU	<b>Tree</b> – 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).
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta	<u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines,</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u>	Yes Yes	FACU OBL	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
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines,</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u>	Yes Yes	FACU OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including berbaceous vince, and woody.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants excent woody vines (approximately 3)</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes	 	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u> <u>5</u>	Yes Yes		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u> <u></u> <u></u> <u></u> <u>10</u>	Yes Yes Yes 		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes Yes Total Cover of total cover:		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size: 5 )         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes Yes = Total Cover of total cover:	FACU           OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes Yes = Total Cover of total cover:		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u></u>	Yes Yes Tes Total Cover of total cover:		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes Tes Total Cover of total cover:	FACU           OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes Tes Total Cover of total cover:		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes Tes Total Cover of total cover:	FACU           OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>20%</u>	Yes Yes Yes Total Cover of total cover:	FACU           OBL	<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes Yes = Total Cover of total cover:		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> <li>Hydrophytic</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes Yes =Total Cover of total cover: =Total Cover		<ul> <li>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).</li> <li>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</li> <li>Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</li> <li>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.</li> <li>Woody Vine – All woody vines, regardless of height.</li> <li>Hydrophytic Vegetation</li> <li>Present?</li> <li>Yas, X.</li> </ul>
Herb Stratum       (Plot size:5)         1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u> <u>20%</u>	Yes Yes Yes =Total Cover of total cover: =Total Cover of total cover:		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

SOIL

calar (maint) 0/	Calar (maint)		1 1 2	<b>T</b> a		Demend	-
ncnes) Color (moist) %	Color (moist)	<u>%</u> Type	e Loc	Texture		Remark	.S
0-20 7.5YR 2.5/1				Mucky Pe	eat	Organic muc	k peat
		<u> </u>					
Type: C=Concentration, D=Depletion, RM=F	Reduced Matrix, N	/IS=Masked Sa	and Grains.	<sup>2</sup> Loc	ation: PL=Po	re Lining, M=Mat	rix.
ydric Soil Indicators: (Applicable to all Li	RRs, unless othe	erwise noted.)		Indi	cators for Pro	blematic Hydrid	c Soils <sup>3</sup> :
Histosol (A1)	Thin Dark St	urface (S9) <b>(Li</b>	RR S, T, U)		1 cm Muck (A	9) <b>(LRR O)</b>	
Histic Epipedon (A2)	Barrier Islan	ds 1 cm Muck	(S12)		2 cm Muck (A	10) <b>(LRR S)</b>	
Black Histic (A3)	(MLRA 15	3B, 153D)			Coast Prairie	Redox (A16)	
X Hydrogen Sulfide (A4)	Loamy Muck	y Mineral (F1)	(LRR O)		(outside MI	RA 150A)	
Stratified Layers (A5)	Loamy Gley	ed Matrix (F2)			Reduced Vert	ic (F18)	
Organic Bodies (A6) (LRR P, T, U)	Depleted Ma	atrix (F3)			(outside MI	RA 150A, 150B	)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark	Surface (F6)			Piedmont Floo	odplain Soils (F19	9) <b>(LRR P, T</b>
X_Muck Presence (A8) (LRR U)	Depleted Da	rk Surface (F7	<i>.</i> )		Anomalous Br	ight Floodplain S	Soils (F20)
1 cm Muck (A9) (LRR P, T)	Redox Depre	essions (F8)			(MLRA 153	3)	
Depleted Below Dark Surface (A11)	Marl (F10) <b>(I</b>	_RR U)			Red Parent M	aterial (F21)	
Thick Dark Surface (A12)	Depleted Oc	hric (F11) <b>(ML</b>	.RA 151)		Very Shallow	Dark Surface (F2	22)
Coast Prairie Redox (A16) (MLRA 150A)	Iron-Mangar	iese Masses (I	F12) <b>(LRR (</b>	0, P, T)	(outside MI	RA 138, 152A ir	n FL, 154)
Sandy Mucky Mineral (S1) (LRR O, S)	Umbric Surfa	ace (F13) <b>(LR</b> I	R P, T, U)		Barrier Islands	Low Chroma M	atrix (TS7)
Sandy Gleyed Matrix (S4)	Delta Ochric	(F17) <b>(MLRA</b>	151)		(MLRA 153	3, 153D)	
Sandy Redox (S5)	Reduced Ve	rtic (F18) <b>(ML</b> I	RA 150A, 1	50B)	Other (Explair	in Remarks)	
Stripped Matrix (S6)	Piedmont Fl	oodplain Soils	(F19) <b>(MLF</b>	RA 149A)			
Dark Surface (S7) (LRR P, S, T, U)	Anomalous	Bright Floodpla	ain Soils (F2	20)	3		
Polyvalue Below Surface (S8)	(MLRA 14	9A, 153C, 153	SD)		Indicators of	hydrophytic vege	tation and
(LRR S, T, U)	Very Shallov	v Dark Surface	e (F22)		wetland hyd	Irology must be p	oresent,
	(MLRA 13	8, 152A in FL	, 154)	1	unless distu	irbed or problem	atic.
estrictive Layer (if observed):							
Туре:							
Depth (inches):				Hydric Soi	I Present?	Yes X	No
emarks:							
nundated pockets with water observed							

U.S. A WETLAND DETERMINATION DA See ERDC/EL TR-10-2	ulf Coastal Plain Region s CECW-CO-R	OMB Control #: 071 Requirement Con (Authority: AR 33	0-0024, Exp: 11/30/2024 trol Symbol EXEMPT: 5-15, paragraph 5-2a)				
Project/Site: Marina Property		City/County: Waretown/Oc	ean Sa	mpling Date: 6/1/22			
Applicant/Owner: Orsted- Ocean Wi	Applicant/Owner: Orsted- Ocean Wind						
Investigator(s): S. Seymour, S. Kirkpatri	ection. Township. Range: Wa	retown/ Lacev Townsh	ip				
Landform (hillside terrace etc.): hillside		l relief (concave, convex, none	a): concave	Slope (%):			
Subregion (LRR or MLRA): LRR T	Lat: 30 700/1/	l ong: -74 18	3/0/0	_ Clope (70)			
Soil Man Unit Name: Berryland sand 0	2% slope rarely flooded	Long74.10	NWI classification:				
Are elimetia ( bydrologia conditions on th	a site typical for this time of year						
Are climatic / hydrologic conditions on th	a site typical for this time of year	? Yes <u>X</u> I'	••• <u> </u>	ain in Remarks.)			
Are vegetation, Soll, or H	ydrologysignificantly dist	urbed? Are "Normal Circui	nstances present?	Yes X NO			
Are Vegetation, Soil, or H	ydrology naturally probler	natic? (If needed, explain	any answers in Remai	rks.)			
SUMMARY OF FINDINGS – Att	ach site map showing sa	ampling point locations	, transects, impo	rtant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes         No         X           Yes         No         X           Yes         No         X	Is the Sampled Area within a Wetland?	Yes No	»_X_			
HYDROLOGY							
Wetland Hydrology Indicators:		Sec	condary Indicators (min	nimum of two required)			
Primary Indicators (minimum of one is r	equired; check all that apply)	<u></u>	Surface Soil Cracks (I	B6)			
Surface Water (A1)	Aquatic Fauna (B13)		Sparsely Vegetated C	oncave Surface (B8)			
High Water Table (A2)	Marl Deposits (B15) (L	.RR U)	Drainage Patterns (B1	10)			
Saturation (A3)	Hydrogen Sulfide Odo	r (C1)	Moss Trim Lines (B16	5) 			
Water Marks (B1)	Oxidized Rhizospheres	s on Living Roots (C3)	Dry-Season Water Ta	ble (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	in Tilled Soils (C6)	Saturation Visible on	) Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Thin Muck Surface (C	7)	Geomorphic Position	(D2)			
Iron Deposits (B5)	Other (Explain in Rem	, arks)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imager	y (B7)		FAC-Neutral Test (D5	)			
Water-Stained Leaves (B9)			Sphagnum Moss (D8)	(LRR T, U)			
Field Observations:							
Surface Water Present? Yes	No X Depth (inches	):					
Water Table Present? Yes	No X Depth (inches	):	- I				
Saturation Present? Yes	No X Depth (inches	Wetland Hydi	rology Present?				
Describe Recorded Data (stream gauge	monitoring well, aerial photos.	previous inspections), if availa	ble:				
	,						
Remarks:							

Г

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

Sampling Point: WET E-UP(Marina)

	Absolute	Dominant	Indicator	Deminence Test werkehest
<u>Tree Stratum</u> (Plot size: <u>30</u> )	% Cover	Species?	Status	Dominance Test worksneet:
	40	Yes	FACU	Number of Dominant Species
2. Quercus alba	30	res	FACU	That Are OBL, FACW, of FAC: 2 (A)
3. Nyssa sylvatica	10	NO	FAC	Total Number of Dominant
4	1			Species Across All Strata: <u>4</u> (B)
5				Percent of Dominant Species
6	1			That Are OBL, FACW, or FAC:(A/B)
7	1			Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	80	=Total Cover		OBL species 0 x 1 = 0
50% of total cover: 4	0 20%	of total cover:	16	FACW species 20 x 2 = 40
Sapling/Shrub Stratum (Plot size: 15 )				FAC species 20 x 3 = 60
1. Vaccinium corymbosum	20	Yes	FACW	FACU species 70 x 4 = 280
2.				UPL species $0   x 5 = 0$
3.				Column Totals: 110 (A) 380 (B)
4				Prevalence Index = $B/A = 3.45$
5				Hydrophytic Vegetation Indicators:
6	<b>.</b>			1 Papid Tast for Hydrophytic Vegetation
7				2. Deminerana Test in 2. 50%
7				2 - Dominance Test is >50%
8				3 - Prevalence Index is ≤3.0°
	20	=Total Cover		Problematic Hydrophytic Vegetation' (Explain)
50% of total cover: 1	0 20%	of total cover:	4	
Herb Stratum (Plot size: 5 )				
1	,			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2.				present, unless disturbed or problematic.
3.				Definitions of Four Vegetation Strata:
4.				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or
5.				more in diameter at breast height (DBH), regardless of
6.				height.
7.				
8				Sapling/Shrub – Woody plants, excluding vines, less
a				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
3	1			
				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12	1			
		=Total Cover		<b>Woody Vine</b> – All woody vines greater than 3.28 ft in
50% of total cover:	20%	of total cover:		neight.
Woody Vine Stratum (Plot size: 30 )				
1. Smilax rotundifolia	10	Yes	FAC	
2.				
3.				
4.	,			
5.				
	10	-Total Cover		Hydrophytic
E0% of total cover:		of total cover	2	Vegetation
	20%			
Remarks: (If observed, list morphological adaptation	ns below.)			
Root zone in the upper 12" of the soil profile. No her	bacous laye	r.		

SOIL

Profile Desc	ription: (Describe	to the dept	th needed to doc	ument the inc	licator o	confirm t	he absence of inc	licators.)		
Depth	Matrix		Redo	x Features	1 . :					
(inches)	Color (moist)	%	Color (moist)	% Тур	e' Loc	<u> </u>	exture	Remark	(S	
0-4	10YR 3/3	100				Mucky	Loam/Clay	Dry organic lo	am, fine	
4-8	10YR 4/2	100					Sandy	Loamy sand (o	dry), fine	
8-20	10YR 6/2	100					Sandy	Dry sand,	fine	
		·								
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, N	//S=Masked S	and Graii		<sup>2</sup> Location: PL=P	ore Lining, M=Mat	trix.	
Hydric Soil	ndicators: (Applica	able to all L	RRs, unless othe	erwise noted.	)		Indicators for P	roblematic Hydri	c Soils <sup>3</sup> :	
Histosol	(A1)		Thin Dark S	urface (S9) <b>(L</b>	RR S, T,	U)	1 cm Muck (	A9) <b>(LRR O)</b>		
Histic Ep	ipedon (A2)		Barrier Islan	ds 1 cm Muck	(S12)		2 cm Muck (A10) (LRR S)			
Black Hi	ack Histic (A3) (MLRA 153B, 153D)					Coast Prairie	e Redox (A16)			
Hydroge	Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) (outside MLRA 150A)				ILRA 150A)					
Stratified	l Layers (A5)		Loamy Gley	ed Matrix (F2)			Reduced Ve	rtic (F18)		
Organic	Bodies (A6) (LRR P	, T, U)	Depleted Ma	atrix (F3)			(outside N	ILRA 150A, 150B	)	
5 cm Mu	cky Mineral (A7) <b>(LF</b>	RR P, T, U)	Redox Dark	Surface (F6)			Piedmont Flo	odplain Soils (F1	9) <b>(LRR P, T)</b>	
Muck Pr	esence (A8) <b>(LRR U</b>	)	Depleted Da	rk Surface (F	7)		Anomalous I	Bright Floodplain S	Soils (F20)	
1 cm Mu	ck (A9) <b>(LRR P, T)</b>		Redox Depr	essions (F8)			(MLRA 15	3B)		
Depleted	Below Dark Surface	e (A11)	Marl (F10) (I	LRR U)			Red Parent I	Material (F21)		
Thick Da	rk Surface (A12)		Depleted Oc	hric (F11) <b>(MI</b>	.RA 151)		Very Shallow	/ Dark Surface (F2	22)	
Coast Pr	airie Redox (A16) ( <b>N</b>	/LRA 150A	) Iron-Mangar	nese Masses (	F12) <b>(LR</b>	R O, P, T)	(outside N	ILRA 138, 152A iı	n FL, 154)	
Sandy M	lucky Mineral (S1) <b>(L</b>	.RR O, S)	Umbric Surfa	ace (F13) <b>(LR</b>	R P, T, U	)	Barrier Island	ds Low Chroma M	atrix (TS7)	
Sandy G	leyed Matrix (S4)		Delta Ochric	(F17) (MLRA	151)		(MLRA 15	3B, 153D)		
Sandy R	edox (S5)		Reduced Ve	rtic (F18) (ML	, RA 150A	150B)	Other (Expla	in in Remarks)		
Stripped	Matrix (S6)		Piedmont Fl	oodplain Soils	(F19) <b>(M</b>	LRA 149A	)	,		
Dark Su	face (S7) <b>(LRR P, S</b>	5, T, U)	Anomalous	Bright Floodpl	ain Soils	(F20)				
Polyvalu	e Below Surface (S8	3)	(MLRA 14	9A, 153C, 15	BD)		<sup>3</sup> Indicators o	f hydrophytic vege	tation and	
(LRR	S, T, U)	,	Very Shallov	v Dark Surface	, (F22)		wetland h	drology must be r	present,	
	,		(MLRA 13	8, 152A in FL	, 154)		unless dis	turbed or problem	atic.	
Restrictive I	_ayer (if observed):									
Type:										
Depth (ir	nches):					Hydr	ic Soil Present?	Yes	No <u>X</u>	
Remarks:										

1-2" layer of dry pine needles and leaves on soil surface

U.S. Arm WETLAND DETERMINATION DATA See ERDC/EL TR-10-20	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)		
Project/Site: Marina Property		City/County: Waretown/Oc	ean Sampling Date: 6/1/22
Applicant/Owner: Orsted/ Ocean Wind	ł	_	State: NJ Sampling Point: WETE-WET (Marina)
Investigator(s): S Seymour S Kirkpatrick	D Healy So	ection Township Range <sup>.</sup> Wa	aretown/Lacey Township
Landform (billoide terrese etc.)		l relief (concerne converse con	
Landform (nillside, terrace, etc.): Level		li relier (concave, convex, non	Stope (%):
Subregion (LRR or MLRA): LRR T	Lat: <u>39.799115</u>	Long: -74.1	85369 Datum:
Soil Map Unit Name: Appoquinimink/ tran	squakins/ Mispillion complex		NWI classification: E2EM5Pd
Are climatic / hydrologic conditions on the	site typical for this time of year	? Yes <u>X</u>	No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hyd	drology significantly dist	urbed? Are "Normal Circu	mstances" present? Yes X No
Are Vegetation , Soil , or Hyd	drology naturally probler	natic? (If needed, explair	any answers in Remarks.)
SUMMARY OF FINDINGS – Atta	ch site map showing sa	ampling point locations	s, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes <u>X</u> No
HYDROLOGY Wetland Hydrology Indicators:		Se	condary Indicators (minimum of two required)
Primary Indicators (minimum of one is rec	quired; check all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2)	Marl Deposits (B15) (L	.RR U)	Drainage Patterns (B10)
X Saturation (A3)	X Hydrogen Sulfide Odo	r (C1)	Moss Trim Lines (B16)
Valer Marks (B1) Sediment Deposits (B2)		$\frac{1}{100} (C4)$	Crayfish Burrows (C8)
X Drift Deposits (B3)	Recent Iron Reduction	in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C	7)	Geomorphic Position (D2)
Iron Deposits (B5)	Other (Explain in Rem	arks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery	(B7)	X	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)			Sphagnum Moss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes	No X Depth (inches	):	
Water Table Present? Yes X	No Depth (inches	): <u>15</u>	
Saturation Present? Yes X	No Depth (inches	:): 0 Wetland Hyd	rology Present? Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gauge,	monitoring well, aerial photos,	previous inspections), if availa	able:
Remarks: Narrow fringe (20- 30 ft wide) of common Fresh Creek) and mud flats interspersed	reed, then opens up into an ex in the wetland.	xpansive salt meadow cordgra	ss tidal wetland. Some surface water (tribs of

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

Sampling Point: WETE-WET (Marina)

Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet:
1. Nvssa svlvatica	<u>45</u>	Yes	FAC	Number of Deminant Species
2.				That Are OBL, FACW, or FAC:4 (A)
3. 4.				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
5 6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
	45	=Total Cover		OBL species 0 x 1 = 0
50% of total cover:2	20%	of total cover:	9	FACW species 80 x 2 = 160
Sapling/Shrub Stratum (Plot size: 15				FAC species 85 x 3 = 255
1. Morella pensylvanica	20	Yes	FAC	FACU species x 4 =
2.				UPL species 0 x 5 = 0
3				Column Totals: <u>165</u> (A) <u>415</u> (B)
4				Prevalence Index = B/A =2.52
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				X 2 - Dominance Test is >50%
8				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
	20	=Total Cover		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:1	0 20%	of total cover:	4	
Herb Stratum (Plot size: 5 )				
1. Calystegia sepium	20	Yes	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2. Phragmites australis	80	Yes	FACW	present, unless disturbed or problematic.
3				Definitions of Four Vegetation Strata:
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5				more in diameter at breast height (DBH), regardless of
6				height.
7.				
8.				than 3 in DBH and greater than 3 28 ft (1 m) tall
9.				
10.				
11.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12				
	100	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: 5	50 20%	of total cover:	20	height.
Woody Vine Stratum (Plot size: 30 )				
1				
2				
3				
4				
5				Hydrophytic
		=Total Cover		Vegetation
50% of total cover:	20%	of total cover:		Present? Yes X No
Remarks: (If observed, list morphological adaptation	ns helow )			
Number of dead trees (mostly black gum) on the we	tland edge. E	Black gum withi	n the vegetat	tion plot show some dieback/ loss of terminal branches.
	0	J J	0	

Profile Description: (Describe to the depth	needed to docu	ment the indica	ator or c	onfirm the	absence of in	dicators.)		
Depth Matrix	Redox	Features % Type <sup>1</sup>	$loc^2$	Toxt	Iro	Pemarks		
		<u>/////////////////////////////////////</u>				Remains		
0-5 10YR 2/1 100				Mucky Lo	am/Clay	Wet organic loam, dense		
5-20 10YR 6/1 100				San	dy	Gleyed fine sand, wet		
	<u> </u>							
	<u> </u>							
'Type: C=Concentration, D=Depletion, RM=Re	educed Matrix, M	S=Masked Sand	Grains.	<u> </u>	ocation: PL=F	Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LR	Rs, unless other	wise noted.)	о <b>т</b> и	Ir	dicators for P	Problematic Hydric Soils":		
Histosol (A1)	Thin Dark Sur	tace (S9) (LRR	S, I, U)	_	1 cm Muck (	(A9) (LRR O)		
Histic Epipedon (A2)	Barrier Islands	S 1 CM MUCK (S	12)			t Prairie Redox (A16)		
Black Histic (A3)	(MLRA 153	B, 153D)		Coast Prairie Redox (A16)				
X Hydrogen Sulfide (A4)	Loamy Mucky	Mineral (F1) <b>(L</b>	RR O)	D)(outside MLRA 150A)				
Stratified Layers (A5)	Loamy Gleyed	d Matrix (F2)		Reduced Vertic (F18)				
Organic Bodies (A6) (LRR P, T, U)	Depleted Mat	rix (F3)			(outside I	MLRA 150A, 150B)		
5 cm Mucky Mineral (A7) (LRR P, T, U)	Redox Dark S	urface (F6)		_	Piedmont Fl	loodplain Soils (F19) <b>(LRR P, T)</b>		
Muck Presence (A8) (LRR U)	Depleted Dark	Surface (F7)			Anomalous	Bright Floodplain Soils (F20)		
1 cm Muck (A9) (LRR P, T)	Redox Depres	ssions (F8)			(MLRA 15	53B)		
Depleted Below Dark Surface (A11)	Marl (F10) <b>(Lf</b>	RR U)			Red Parent	Material (F21)		
Thick Dark Surface (A12)	Depleted Och	ric (F11) <b>(MLR</b>	A 151)		Very Shallov	w Dark Surface (F22)		
Coast Prairie Redox (A16) (MLRA 150A)	Iron-Mangane	se Masses (F1	2) (LRR	O, P, T)	P, T) (outside MLRA 138, 152A in FL, 154)			
Sandy Mucky Mineral (S1) (LRR O, S)	Umbric Surfac	ce (F13) <b>(LRR F</b>	P, T, U)		Barrier Islan	nds Low Chroma Matrix (TS7)		
X Sandy Gleyed Matrix (S4)	Delta Ochric (	F17) (MLRA 15	1)			53B, 153D)		
Sandy Redox (S5)	Reduced Vert	ic (F18) (MLRA	150A, 1	50B)	50B) Other (Explain in Remarks)			
Stripped Matrix (S6)	Piedmont Flo	odplain Soils (F	19) <b>(MLF</b>	RA 149A)		,		
Dark Surface (S7) (LRR P. S. T. U)	Anomalous B	right Floodplain	Soils (F	20)				
Polyvalue Below Surface (S8)	(MLRA 149	A. 153C. 153D)	(	- /	<sup>3</sup> Indicators o	of hydrophytic vegetation and		
(LRR S. T. U)	Verv Shallow	Dark Surface (F	22)		wetland h	ovdrology must be present.		
	(MLRA 138	, 152A in FL, 1	54)		unless dis	sturbed or problematic.		
Restrictive Layer (if observed):								
Туре:								
Depth (inches):				Hydric	Soil Present?	Yes X No		
Remarks:								

Common reed rhizomes in upper foot of soil profile. Few dead tree roots also.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gu See ERDC/EL TR-10-20; the proponent agency is	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)	
Project/Site: Nautilus/ Lighthouse	_ City/County: Waretown, Oc	ean Sampling Date: 6/1/2022
Applicant/Owner: Orsted		State: NJ Sampling Point: Lighthouse Dr.
Investigator(s): S. Seymour, S. Kirkpatrick, D. Healy Se	ction, Township, Range: Wa	retown/ Lacey Township
Landform (hillside, terrace, etc.): level Local	relief (concave, convex, none	a): level Slope (%): 0
Subregion (LRR or MLRA): LRR T Lat: 39.801530	Lona: -74.18	30837 Datum:
Soil Map Unit Name: Psammaguents, frequently flooded		NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year	Yes X	lo (If no explain in Remarks )
Are Vegetation Soil or Hydrology X significantly dist.	urbed? Are "Normal Circu	nstances" present? Ves No X
Are Vegetation, or Hydrology significantly dist	atic? (If needed, evolution	any answers in Romarks )
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations	, transects, important features, etc.
Hydrophytic Vegetation Present?       Yes       X       No         Hydric Soil Present?       Yes       X       No         Wetland Hydrology Present?       Yes       X       No	Is the Sampled Area within a Wetland?	Yes <u>X</u> No
The parcel has been ditched; the ditch has been recently dredged and th affected the wetland hydrology.	e material sidecast into the w	etland. The ditch and recent dredging may have
Wetland Hydrology Indicators:	Ser	condary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u></u>	Surface Soil Cracks (B6)
X Surface Water (A1) Aquatic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2) Marl Deposits (B15) (L	RR U)	Drainage Patterns (B10)
X Saturation (A3) X Hydrogen Sulfide Odor	(C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres	on Living Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced I	ron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction	in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Aigai Mat or Crust (B4) Inin Muck Surface (C7	) 	Geomorphic Position (D2)
In Deposits (B5) Other (Explain in Rema	<u> </u>	Shallow Aquitatu (DS)
X Water-Stained Leaves (B9)		Sphagnum Moss (D8) (LRR T. U)
Field Observations:	<u>_</u>	
Surface Water Present? Yes X No Depth (inches)	0.5	
Water Table Present? Yes X No Depth (inches)	: 6	
Saturation Present? Yes X No Depth (inches)	: 0 Wetland Hydr	ology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, p	previous inspections), if availa	ble:
Remarks:		
There is a ditch running through the parcel with standing water 1-10" dee There is a culvert under Lighthouse Drive that discharges to a (tidal) can	p; no discernible flow. Water al to the north.	filled the soil pit to within 6" of the soil surface.

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

Sampling Point: Lighthouse Dr.

Tree Stratum (Plot size: 30)	Absolute Dominal	nt Indicator	Dominance Test worksheet:
1.			Number of Derrigent Creation
2.			That Are OBL, FACW, or FAC:(A)
3			Total Number of Dominant
4.			Species Across All Strata:(B)
5			Percent of Dominant Species
6			That Are OBL, FACW, or FAC: 100.0% (A/B)
<i>1</i>			Tatel % Cover of:
o	Tatal Ca		
E00/ of total approx			$\frac{1}{1} \frac{1}{1} \frac{1}$
Sopling/Shruh Stratum (Dist size: 15	20% 01 10181 00	ver	FAC w species $90$ $x 2 = 180$
<u>Sapling/Shrub Stratum</u> (Plot size:)			FAC species $0$ $x^3 = 0$
1.			FACU species $0 \times 4 = 0$
2.			$\begin{array}{c} \text{OPL species}  0  \text{X 5} =  0 \\ \text{OPL species}  -100 \\ OPL speci$
3.			Column Totals: $90$ (A) $180$ (B)
4.			Prevalence Index = B/A = 2.00
5			Hydrophytic Vegetation Indicators:
6			1 - Rapid Test for Hydrophytic Vegetation
7.			X 2 - Dominance Test is >50%
8			X 3 - Prevalence Index is $\leq 3.0^1$
	=Total Cov	ver	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20% of total co	ver:	
Herb Stratum (Plot size: 5 )			
1. Phragmites australis	90 Yes	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2.			present, unless disturbed or problematic.
3			Definitions of Four Vegetation Strata:
4.			<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or
5			more in diameter at breast height (DBH), regardless of
6.			height.
7.			
8.			<b>Sapling/Snrub</b> – woody plants, excluding vines, less than 3 in DBH and greater than 3 28 ft (1 m) tall
9.			
10.			
11.			<b>Herb</b> – All herbaceous (non-woody) plants, regardless
12.			or size, and woody plants less than 3.20 it tall.
	90 =Total Cov	/er	Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: 4	5 20% of total co	ver: 18	height.
Woody Vine Stratum (Plot size: 30 )			
<u> </u>			
2			
3			
5			Hydrophytic
			Vegetation
		ver:	
Remarks: (If observed, list morphological adaptation	is below.)		

SOIL

Profile Desc	ription: (Describe to t	the depth	needed to doc	ument the indi	cator or co	onfirm th	e absence	of indicat	ors.)	
Depth	Matrix		Redo	x Features						
(inches)	Color (moist)	%	Color (moist)	% Туре	<sup>1</sup> Loc <sup>2</sup>	Te	exture		Remar	rks
0-20	10yr 2/1	100				N	luck	Organic m	uck with reed gras	ss rhizomes, saturated
<sup>1</sup> Type: C=Co	ncentration, D=Depleti	on, RM=R	educed Matrix, N	/IS=Masked Sa	nd Grains.		<sup>2</sup> Location:	PL=Pore l	_ining, M=Ma	atrix.
Hydric Soil I	ndicators: (Applicable	to all LR	Rs, unless othe	erwise noted.)			Indicators	for Proble	ematic Hydr	ic Soils <sup>3</sup> :
X Histosol (	(A1)	_	Thin Dark S	urface (S9) <b>(LR</b>	R S, T, U)		1 cm M	luck (A9) <b>(</b>	(LRR O)	
Histic Ep	ipedon (A2)	_	Barrier Islan	ds 1 cm Muck	(S12)		2 cm M	luck (A10)	(LRR S)	
Black His	stic (A3)		(MLRA 153B, 153D) Coast Prairie Redox (A16					dox (A16)		
X Hydroger	n Sulfide (A4)	_	Loamy Mucky Mineral (F1) (LRR O) (outside MLRA 150A)				A 150A)			
Stratified	Layers (A5)	-	Loamy Gley	ed Matrix (F2)			Reduce	ed Vertic (	F18)	
Organic E	Bodies (A6) (LRR P, T,	U) -	Depleted Ma	atrix (F3)			(outs	ide MLRA	A 150A, 150E	3)
5 cm Mu	cky Mineral (A7) (LRR	P, T, U)	Redox Dark	Surface (F6)			Piedmo	ont Floodp	lain Soils (F	19) <b>(LRR P, T)</b>
Muck Pre	esence (A8) (LRR U)	· · · · -	Depleted Da	rk Surface (F7)	)		Anoma	lous Brigh	t Floodplain	Soils (F20)
1 cm Mu	ck (A9) (LRR P, T)	-	Redox Depre	essions (F8)			(MLR	A 153B)		× ,
Depleted	Below Dark Surface (A	.11) -	 Marl (F10) <b>(I</b>	_RR U) `́			Red Pa	, arent Mate	rial (F21)	
Thick Da	rk Surface (A12)	· -	Depleted Oc	hric (F11) <b>(ML</b>	RA 151)		Verv St	hallow Dai	k Surface (F	22)
Coast Pra	airie Redox (A16) ( <b>MLF</b>	A 150A)	Iron-Mangar	ese Masses (F	( <b>LRR</b>	D. P. T)	(outs	ide MLR	A 138. 152A	ín FL. 154)
Sandy M	ucky Mineral (S1) (LRR	O. S)	Umbric Surfa	ace (F13) <b>(LRR</b>	P. T. U)	-,-,-,	Barrier	Islands I o	ow Chroma N	Aatrix (TS7)
Sandy Gl	eved Matrix (S4)	- , - ,	Delta Ochric	(F17) <b>(MLRA</b>	151)		(MLR	A 153B. 1	(53D)	
Sandy Re	edox(S5)	-	Reduced Ve	rtic (F18) (MLF	RA 150A. 1	50B)	Other (	Explain in	Remarks)	
Stripped	Matrix (S6)	-	Piedmont Fl	oodolain Soils	(F19) <b>(MI R</b>	20-) 2A 149A)		Explainin	rtomantoj	
Dark Sur	face (S7) <b>(I RR P. S. T</b> .	- -	Anomalous	Bright Floodpla	in Soils (F2	20)				
Bolyvalue	Below Surface (S8)		(MI RA 14	9A 153C 153	ווי נווט געע גער גער וח		<sup>3</sup> Indicat	tors of hyd	Ironhytic yea	etation and
				v Dark Surface	(F22)		wotle	and bydrol	oav must be	present
	, 1, 0)	-	(MLRA 13	8, 152A in FL,	(1 22) 154)		unles	ss disturbe	ed or problem	natic.
Restrictive I	aver (if observed)		•			<b>I</b>			•	
Туре:										
Depth (in	ches):					Hydri	c Soil Prese	ent?	Yes X	No
Remarks:										

U.S. Army WETLAND DETERMINATION DATA S See ERDC/EL TR-10-20; t	OMB Control #: 0 Requirement Co (Authority: AR	710-0024, Exp: 11/30/2024 ontrol Symbol EXEMPT: 335-15, paragraph 5-2a)			
Project/Site: Holiday Beach Club Applicant/Owner: Orstead/ Ocean Wind		_ City/County: Waretown/ Ocean Sampling Date: 7/6/20 State: NJ Sampling Point: WET			
Investigator(s): S. Seymour, D. Healy	Sec	tion, Township, Range:			
l andform (hillside, terrace, etc.): level	Local	relief (concave, convex, none	e): none	Slope (%): 0	
Subregion (I RP or MI RA): I RP T	Lat: 39 800263	L ong: -74 17	70521	Optum:	
	Lat. <u>39.000203</u>	LONG74.17			
Soir Map Onit Name. Psanmaquents, 0-2%	slope, frequently hooded				
Are climatic / hydrologic conditions on the sit	e typical for this time of year?	Yes <u>X</u> N	No (If no, exp	plain in Remarks.)	
Are Vegetation, Soil, or Hydro	ology significantly distur	bed? Are "Normal Circur	mstances" present?	Yes No X	
Are Vegetation, Soil, or Hydro	ology naturally problema	atic? (If needed, explain	any answers in Rem	narks.)	
SUMMARY OF FINDINGS – Attach	n site map showing san	npling point locations	, transects, imp	oortant features, etc.	
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area			
Hydric Soil Present?	Yes No X	within a Wetland?	Yes	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>No X</u>				
HYDROLOGY					
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required)         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 (B2)         Water-Stained Leaves (B9)         Field Observations:         Surface Water Present?       Yes         Water Table Present?       Yes	Aquatic Fauna (B13) Aquatic Fauna (B13) Arl Deposits (B15) <b>(LR</b> Aydrogen Sulfide Odor ( Oxidized Rhizospheres of Presence of Reduced Ira Recent Iron Reduction ir Thin Muck Surface (C7) Other (Explain in Remar 7) No X Depth (inches): No X Depth (inches):	Sec R U) (C1) on Living Roots (C3) on (C4) n Tilled Soils (C6) ks)	condary Indicators (m Surface Soil Cracks Sparsely Vegetated Drainage Patterns ( Moss Trim Lines (B Dry-Season Water Crayfish Burrows (C Saturation Visible of Geomorphic Positio Shallow Aquitard (D FAC-Neutral Test (I Sphagnum Moss (D	Innimum of two required) (B6) Concave Surface (B8) B10) 16) Table (C2) (C9) n (D2) (C9) (D2) (D2) (D2) (D3) (LRR T, U)	
Saturation Present? Yes	No X Depth (inches):	Wetland Hydr	ology Present?	Yes No X	
(includes capillary fringe)					
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, pr	revious inspections), if availal	ble:		
Remarks:					

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

Sampling Point: WET F UP

Tree Stratum (Plot size: 30 )	Absolute Dominant Ind	licator
1	78 COVEL Species ! SI	
2.		That Are OBL, FACW, or FAC:(A)
3		Total Number of Dominant Species Across All Strata: (B)
5.		Percent of Dominant Species
6.		That Are OBL, FACW, or FAC:(A/B)
7		Prevalence Index worksheet:
8		Total % Cover of: Multiply by:
	=Total Cover	OBL species x 1 =
50% of total cover:	20% of total cover:	FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15 )		FAC species x 3 =
1		FACU species x 4 =
2.		UPL species x 5 =
3.		Column Totals: (A) (B)
4.		Prevalence Index = B/A =
5.		Hydrophytic Vegetation Indicators:
6		1 - Rapid Test for Hydrophytic Vegetation
7		2 Dominance Test is > 50%
7		
8		
	=Total Cover	Problematic Hydrophytic Vegetation (Explain)
50% of total cover:	20% of total cover:	
Herb Stratum (Plot size: 5)		
1		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2.		present, unless disturbed or problematic.
3.		Definitions of Four Vegetation Strata:
4.		Tree – Woody plants, excluding vines, 3 in (7.6 cm) or
5		more in diameter at breast height (DBH), regardless of
6		height.
0		
7		Sapling/Shrub – Woody plants, excluding vines, less
8		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9		
10		Herb - All berbaceous (non-woody) plants, regardless
11		of size, and woody plants less than 3.28 ft tall.
12.		
	=Total Cover	Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover:	20% of total cover:	height.
Woody Vine Stratum (Plot size: 30 )		
···		
2		[
3		
4		
5		Hydrophytic
	=Total Cover	Vegetation
50% of total cover:	20% of total cover:	Present? Yes No X
Pomarke: (If observed list morphological education		
No vegetation. Open sand adjacent to picnic area ar	nd plyaground	
	a piyagioana.	

SOIL

Profile Desc	ription: (Describe to	o the depth	needed to doc	ument the indic	ator or co	onfirm th	e absence of inc	licators.)	
Depth	Matrix		Redo	x Features	2	_		_	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Type'	Loc <sup>2</sup>	Те	xture	Remarks	
0-8	10YR 5/3	100				S	andy	Coarse	dry sand
8-20	10YR 5/4	100				S	andy Coar	se dry sand with 10	% rounded quartz pebbles
		<u> </u>							
					·				
<u>1</u> , , , , , , , , , , , , , , , , , , ,							2		
Type: C=Co	ncentration, D=Deple	etion, RM=F	Reduced Matrix, N	/IS=Masked San	d Grains.		Location: PL=P	ore Lining, M=	Matrix.
Hydric Soli I	ndicators: (Applicat	Die to all LF	Thin Dork St	erwise noted.)	ст IN		1 om Muck (		aric Solis :
Histosol	(AT) inodon (A2)		Barrior Islan	ds 1 cm Muck (S	( <b>3</b> , <b>1</b> , <b>0</b> )		2 cm Muck (		
Black His	$\frac{1}{2}$				12)		2 CHI MUCK (	$\frac{10}{2} \left( \frac{10}{2} \right) = \frac{10}{2} \left( \frac{10}{2} \right)$	
	A = Cultide (A = A)			(130, 1330)					
Hydroger	I Sullide (A4)			(y Iviirierai (FT) <b>(L</b> od Motrix (E2)	.KK U)				
	Layers (A5)	<b>T</b> 10	Loany Gley						
	boules (Ao) (LRR P,	1, U) - D T IN	Depleted Ma	aurix (F3)				ILKA 150A, I:	
	CKY Mineral (A7) (LRI	(P, I, U)	Redox Dark	Sufface (F6)				Dooplain Solis	(F19) <b>(LRR P, I)</b>
	esence (A8) (LRR U)		Depleted Da	irk Surface (F7)				Bright Floodpla	IIN SOIIS (F20)
1 cm Mu	CK (A9) (LRR P, I)	( <b>.</b> )	Redox Depr	essions (F8)			(MLRA 15	3B)	
	Below Dark Surface	(A11)	Mari (F10) (I				Red Parent I	Material (F21)	
Thick Da	rk Surface (A12)		Depleted Oc	hric (F11) <b>(MLR</b>	A 151)		Very Shallow	/ Dark Surface	(F22)
Coast Pr	airie Redox (A16) (M	LRA 150A)	Iron-Mangar	iese Masses (F1	2) (LRR C	D, P, T)	(outside N	ILRA 138, 152	'A in FL, 154)
Sandy M	ucky Mineral (S1) (LF	RR 0, S)	Umbric Surfa	ace (F13) <b>(LRR F</b>	P, T, U)		Barrier Island	ds Low Chrom	a Matrix (TS7)
Sandy G	leyed Matrix (S4)		Delta Ochric	(F17) <b>(MLRA 1</b> 5	51)		(MLRA 15	3B, 153D)	
Sandy R	edox (S5)		Reduced Ve	rtic (F18) <b>(MLRA</b>	150A, 15	50B)	Other (Expla	in in Remarks	)
Stripped	Matrix (S6)		Piedmont Fl	oodplain Soils (F	19) <b>(MLR</b>	A 149A)			
Dark Sur	face (S7) (LRR P, S,	T, U)	Anomalous	Bright Floodplain	Soils (F2	0)			
Polyvalue	e Below Surface (S8)		(MLRA 14	9A, 153C, 153D)	)		<sup>3</sup> Indicators o	f hydrophytic v	regetation and
(LRR S	S, T, U)		Very Shallow	v Dark Surface (F	-22)		wetland hy	/drology must	be present,
			(MLRA 13	8, 152A in FL, 1	54)		unless dis	turbed or prob	lematic.
Restrictive L	ayer (if observed):								
Type:									
Depth (in	iches):					Hydri	c Soil Present?	Yes	<u>No X</u>
Remarks:									

U.S. Army Corps of Engine WETLAND DETERMINATION DATA SHEET – Atlantic a See ERDC/EL TR-10-20; the proponent ager	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)				
Project/Site: Holiday Beach Club	City/County: Waretown/ Oc	ean Sampling Date: 7/6/2022			
Applicant/Owner: Orstead/ Ocean Wind		State: NJ Sampling Point: WET F WET			
Investigator(s): S. Sevmour. D. Healy	Section, Township, Range:				
Landform (hillside, terrace, etc.): hillslope	Local relief (concave, convex, none	e): concave Slope (%): 2			
Subregion (I RR or MI RA): I RR T Lat: 39.800263	- long: -74.17	79521 Datum:			
Soil Map Unit Name: Psammaguents, 0-2% slope, frequently floor	led	NWI classification: NONE			
Are climatic / hydrologic conditions on the site typical for this time of	f vear? Yes X N	lo (If no. explain in Remarks.)			
Are Vegetation Soil or Hydrology significant	v disturbed? Are "Normal Circur	nstances" present? Yes No X			
Are Vegetation Soil or Hydrology naturally p	roblematic? (If needed, explain	any answers in Remarks )			
SUMMARY OF FINDINGS – Attach site man showin	a sampling point locations	transacts important foaturos atc			
Solvimant of Findings – Allach sile map showin		, transects, important leatures, etc.			
Hydrophytic Vegetation Present? Yes No X	Is the Sampled Area				
Hydric Soil Present? Yes X No	within a Wetland?	Yes No_X			
Wetland Hydrology Present?   Yes   X   No	_				
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:	Sec	condary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that app	<u>ly)</u>	Surface Soil Cracks (B6)			
Surface Water (A1)Aquatic Fauna (E	313) 45) <b>(LBB LI)</b>	Sparsely Vegetated Concave Surface (B8)			
High Water Lable (A2) Mari Deposits (B	-15) (LRR U)	Drainage Patterns (B10) Moss Trim Lines (B16)			
Water Marks (B1) Oxidized Rhizosi	beres on Living Roots (C3)	Dry-Season Water Table (C2)			
Sediment Deposits (B2) Presence of Red	luced Iron (C4)	Crayfish Burrows (C8)			
Drift Deposits (B3)	uction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Thin Muck Surfa	ce (C7)	Geomorphic Position (D2)			
Iron Deposits (B5) Other (Explain in	Remarks)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)		Sphagnum Moss (D8) (LRR T, U)			
Field Observations:					
Surface Water Present? Yes No X Depth (i	nches):				
Water Table Present? Yes No A Depth (I Saturation Present? Yes X No Depth (i	nches): 12 Wetland Hydr	ology Present? Ves X No			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspections), if availa	ble:			
Remarks:	and have a the second	he wetlend from Ohene Deed All surfaces (			
during storms ~ no drainage basins or culverts in the vicinity.	er nowpaths on the westerly side of t	ne wetiand from Shore Road.All surface runoff			

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

Sampling Point: WET F WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1.       2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3. 4.				Total Number of Dominant Species Across All Strata: 1 (B)
5.				Percent of Dominant Species
7				Prevalence Index worksheet:
8				Total % Cover of Multiply by:
· · ·		=Total Cover		$\frac{1}{\text{OBL species}}  0 \qquad \text{x1} = 0$
50% of total cover:	20%	of total cover:		FACW species 87 x 2 = 174
Sapling/Shrub Stratum (Plot size: 15 )				FAC species 8 x 3 = 24
1				FACU species 0 x 4 = 0
2.				UPL species 0 x 5 = 0
3.				Column Totals: 95 (A) 198 (B)
4				Prevalence Index = B/A = 2.08
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				X 2 - Dominance Test is >50%
8				X 3 - Prevalence Index is $\leq 3.0^{1}$
	:	=Total Cover		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 5 )				
1. Phragmites australis	80	Yes	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2. Solidago sempervirens	7	No	FACW	present, unless disturbed or problematic.
3. Calystegia sepium	8	No	FAC	Definitions of Four Vegetation Strata:
4				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or
5				more in diameter at breast height (DBH), regardless of height
6.				hoight
7.				Sapling/Shrub – Woody plants, excluding vines, less
8.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9				
10 11				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12				
	95	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover:4	8 20%	of total cover:	19	height.
Woody Vine Stratum (Plot size: 30 )				
1				
2				
3				
4				
5				Hydrophytic
		=Total Cover		Vegetation
50% of total cover:	20%	of total cover:		Present? Yes <u>X</u> No
Remarks: (If observed, list morphological adaptation Very dense stand of 6-10' tall common reed with sca	ns below.) attered seasio	de goldenrod a	nd hedge bin	idweed.

SOIL

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix		Redo	x Features	S						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Te	exture		Remar	ks
0-12	10YR 5/4	100					S	andy		Coarse s	and
12-20	10YR 5/1	100					Loam	y/Clayey	fine silty clay v	vith about 10% r	ounded quartz pebbles
<sup>1</sup> Type: C=Co	ncentration, D=Depl	etion, RM=	Reduced Matrix, N	/S=Maske	ed Sanc	Grains.		<sup>2</sup> Location:	PL=Pore Lir	ning, M=Ma	trix.
Hydric Soil I	ndicators: (Applica	ble to all L	RRs, unless othe	erwise no	ted.)			Indicators	for Probler	natic Hydri	c Soils <sup>3</sup> :
Histosol (	(A1)		Thin Dark S	urface (S9	) (LRR	S, T, U)		1 cm N	luck (A9) <b>(L</b>	RR O)	
Histic Ep	ipedon (A2)		Barrier Islan	ds 1 cm N	luck (S	12)		2 cm N	luck (A10) <b>(</b>	LRR S)	
Black His	tic (A3)		(MLRA 15	3B, 153D	)			Coast I	Prairie Redo	ox (A16)	
Hydroger	n Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR O)				(outside MLRA 150A)				
Stratified	Layers (A5)		Loamy Gleyed Matrix (F2)				Reduced Vertic (F18)				
Organic E	Bodies (A6) (LRR P,	T, U)	X Depleted Matrix (F3)				(outside MLRA 150A, 150B)				
5 cm Mu	cky Mineral (A7) <b>(LR</b>	R P, T, U)	Redox Dark Surface (F6)				Piedmont Floodplain Soils (F19) (LRR P, T)			9) <b>(LRR P, T)</b>	
Muck Pre	esence (A8) (LRR U)		Depleted Da	rk Surface	e (F7)			Anoma	lous Bright	Floodplain	Soils (F20)
1 cm Mu	ck (A9) (LRR P, T)		Redox Depr	essions (F	8)			(MLR	A 153B)		
Depleted	Below Dark Surface	e (A11)	Marl (F10) <b>(LRR U)</b>				Red Parent Material (F21)				
Thick Da	rk Surface (A12)		Depleted Ochric (F11) (MLRA 151)				Very Shallow Dark Surface (F22)				
Coast Pra	airie Redox (A16) ( <b>M</b>	LRA 150A	) Iron-Manganese Masses (F12) (LRR O,			D, P, T) (outside MLRA 138, 152A in FL, 154)			n FL, 154)		
Sandy M	ucky Mineral (S1) <b>(L</b>	RR O, S)	Umbric Surface (F13) (LRR P, T, U)			Barrier Islands Low Chroma Matrix (TS7)			latrix (TS7)		
Sandy Gl	eyed Matrix (S4)		Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)					
Sandy Re	edox (S5)		Reduced Ve	Reduced Vertic (F18) (MLRA 150A, 150		<b>0B)</b> Other (Explain in Remarks)					
Stripped	Matrix (S6)		Piedmont Fl	odplain S	Soils (F	9) <b>(MLR</b>	A 149A)				
Dark Sur	face (S7) (LRR P, S	, T, U)	Anomalous	Bright Floo	odplain	Soils (F2	20)				
Polyvalue Below Surface (S8)		(MLRA 149A, 153C, 153D)			<sup>3</sup> Indicators of hydrophytic vegetation and		etation and				
(LRR S, T, U)		Very Shallow	Very Shallow Dark Surface (F22)			wetland hydrology must be present,			present,		
		(MLRA 13	(MLRA 138, 152A in FL, 154)			unle	ss disturbed	l or problem	natic.		
Restrictive L	ayer (if observed):										
Type:											
Depth (in	ches):						Hydri	c Soil Prese	ent?	Yes X	No
Remarks:							•				
Area may have	ve been historically f	illed. Comr	non reed rhizomes	througho	ut soil p	orofile.					



BL England



## **Ocean Wind – B.L. England Substation**

## Wetland Supplemental Delineation Report

39°17'23" N 74°38'02" W 900 North Shore Road Upper Township, Cape May County, New Jersey Tax Block 479, Lot 76



## **Document Version**

File Name	Preparer	Editor	Checker	Accepter	Approver
B.L. England Delineation Report_DRAFT	DH		LW		



## **Table of Contents**

1.	Pr	roject Description	4
2.	Me	lethods	5
	2.1	Desktop Review	5
	2.2	Field Survey	5
3.	Re	esults	5
	3.1	Desktop Review	5
	3.2	Wetland Delineation Field Survey	
	3.3	Wildlife	12
4.	Lit	iterature Cited	13

#### List of Tables

Table 3.1-1 USDA Web Soil Survey Results within the WRA	.10
Table 3.2-2 Summary of Wetland Delineation Field Survey Results	.12
Table 3.3-1 Bird Species Observed in the WRA	.13

#### List of Figures

Figure 1.1-1 Wetland Review Area for BL England Substation Relocation Overview	4
Figure 3.1-1 NJDEP Watershed Management Area Map	6
Figure 3.1-2 FEMA FIRM Flood Hazard Area Map	7
-igure 3.1-3 NWI Wetlands Map	8
-igure 3.1-4 NJDEP Wetland Map	9
Figure 3.2-1 Field Survey Wetland Delineation Map	.11

#### List of Appendices

Attachment A.	USDA NRCS Web Soil Survey Custom Soil Resource Report
Attachment B.	Site Photographs
Attachment C.	Wetland Delineation Datasheets
Attachment D.	Letter of Interpretation (LOI)

# Ocean Wind

#### 1. **Project Description**

Ocean Wind, LLC (Ocean Wind), a joint venture between Ørsted Wind Power North America, LLC (Ørsted) and Public Service Enterprise Group Renewable Generation LLC (PSEG), proposes to construct and operate the Ocean Wind 1 Offshore Wind Farm Project (OCW01) pursuant to the Bureau of Ocean Energy Management (BOEM) requirements for the commercial lease of submerged lands for renewable energy development on the outer continental shelf (Lease Area OCS-A-0498). Ocean Wind 1 intends to develop, build, operate, and own a utility-scale offshore wind farm located approximately 15 miles off the coast of New Jersey within the OCS-A 0498 Lease area (the "Project").

As a part of Project development, Ocean Wind is looking to best utilize the available points of interconnection to the onshore grid. One point of interconnection is at the former BL England Generating Station (BLEGS). A proposed Onshore Substation will be located adjacent to the point of interconnection within a portion of the former BLEGS property, in an area that previously was used to store coal. To support the evaluation of the proposed substation site a wetland/watercourse delineation and ecological community assessment was completed within the Wetland Review Area (WRA) in 2022.

The WRA encompasses an area in Upper Township within Cape May County, NJ (Figure 1.1-1). The WRA includes the land potentially disturbed in association with the proposed substation and interconnection site at the former B.L England Generating Station site (Figure 1.1-1).



Figure 1.1-1 Wetland Review Area for BL England Substation Relocation Overview

## Ocean Wind An Ørsted & PSEG project

#### 2. Methods

HDR Engineering, Inc. (HDR) verified the boundaries of wetlands within the WRA in two phases, Desktop Review and Field Survey, as described below. The WRA (Figure 1.1-1) includes the potential onshore substation parcel area and the interconnection area. The onshore export cable area extends from Clay Avenue to the new substation location through the former golf course substation location and wetlands were previously delineated and included in the original wetland delineation report. Therefore, they are not repeated in this report.

#### 2.1 Desktop Review

Prior to conducting the wetland delineation, relevant materials were reviewed, and are included as attachments for reference:

- NJDEP Watershed Management Area Map (Figure 3.1-1) Federal Emergency Management Agency (FEMA) 2013 Preliminary Working Data Flood Insurance Rate Maps (FIRM) (Figure 3.1-2)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map (Figure 3.1-3)
- New Jersey State Department of Environmental Protection (NJDEP) Wetlands Map (Figure 3.1-4)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation (NRCS) Web Soil Survey (WSS) Custom Soil Resource Report (Attachment A)
- Division of Land Use Regulation LOI (Attachment D)

#### 2.2 Field Survey

On June 15<sup>th</sup>, 2022, the boundaries of the wetlands within the WRA were verified. The wetland boundaries were walked and verified based on the three-parameter approach (soils, vegetation, and hydrology) described in the 1989 Federal Interagency Manual. Upland and wetland observation points were recorded for the verified wetland. Points were collected along the previously mapped wetland boundaries by a New Jersey licensed professional land surveyor during the visit in June 2022. Photographs of the site, wetland observation soil pits, and vegetation were taken and are included in Attachment B. Wetland delineation data sheets are included in Attachment C.

#### 3. Results

#### 3.1 Desktop Review

The Division of Land Use Regulation (Division) issued an LOI in March 2019 for wetland delineation surveys that had been done on November 14<sup>th</sup>, 2018, and December 27<sup>th</sup>, 2018, surrounding the WRA.

The WRA is within the NJDEP Great Egg Harbor Watershed Management Area. The Great Egg Harbor Watershed Management Area includes the following watersheds: Great Egg Harbor River, Tuckahoe River, Absecon Creek, and Patong Creek all of which drain to Great Egg Harbor Bay in Atlantic County (NJDEP).

The watershed's dominant land use is forests, with the remaining uses being agricultural and development. Population centers include Berlin, Winslow, Monroe, Mays Landing and Egg Harbor City. The major tributaries are Hospitality Branch, Watering Race, Babcock Creek, Deep Run, South River, and Stephens Creek. There are many lakes and ponds in this area, but the largest is Lake Lenape, near Mays Landing. Of the approximately 12 New Jersey Pollutant Discharge Elimination System (NJPDES)permitted discharges here, about half are municipal and half are industrial/commercial. Waters in the Great Egg Harbor watershed are classified as FW-2 Non-trout, Pinelands Waters, FW-1, and SE-1 (NJDEP). There is one non-community Well Head Protection Area (Tier 1-3) within the WRA.





Figure 3.1-1 NJDEP Watershed Management Area Map

FEMA floodplain maps show that the majority of the WRA is outside of the AE zone that surrounds it (Figure 3.1-2). However, some AE zoned areas are on the southeast and northwest areas of the WRA. A zone AE classification means there is a 1% chance each year of severe flooding and therefore deemed high risk areas by FEMA (Federal Emergency Management Agency) and NFIP (National Flood Insurance Program). AE zones in this area are most concerned with flash flooding and hurricanes. Figure 3.1-2 also shows areas within the WRA labeled as zone X. A zone X classification area has minimal flood hazard threats and is outside of the Special Flood Hazard Area (SFHA) classification meaning higher than the elevation of the 0.2% annual chance of flooding criteria.

## Ocean Wind

An Ørsted & PSEG project



Figure 3.1-2 FEMA FIRM Flood Hazard Area Map

The proposed BL England Substation property is highly disturbed due to previous use as a coal storage area and recent remediation of the site. Based on review of the National Wetland Inventory (NWI) mapper, (Figure 3.1-3) a portion of the WRA to the west is classified as E2EM1Pd- Estuarine and Marine Wetland. There is also a small area of PSS1/4B- Freshwater Forested/Shrub Wetland to the south of the WRA beyond the bordering E2EM1Pd. There are some areas of PUBHx- Freshwater Pond, PFO1B Freshwater Forested/Shrub Wetland and PFO1E- Freshwater Forested/Shrub Wetland to the southeast on the former golf course property. However, the area immediately bordering the WRA to the north, east and southeast is unmapped in the NWI likely due to its high level of disturbance. Beyond these disturbed and unmapped areas to the north and east the property is E1UBL6- Estuarine and Marine Deepwater.

## Ocean Wind An Ørsted & PSEG project



Figure 3.1-3 NWI Wetlands Map

According to the NJDEP GeoWeb Land Use/Land Cover 2015 layer the WRA is classified mostly as urban/industrial land. According to the NJDEP Wetland mapper, there are no NJDEP wetlands within the WRA. Saline Marsh (low marsh) borders the WRA to the west along the concrete retaining wall and a small area adjacent to the southeast corner is mapped as managed wetland in built-up maintained rec-area (Figure 3.1-4).

# Ocean Wind



Figure 3.1-4 NJDEP Wetland Map

A USDA Web Soil Survey report was collected for the WRA (Table 3.1-1). Soils within the WRA were found to be mostly (≈98.3 %) split between UdrB- Udorthents and UR- Urban land. The remaining ≈1.7% of land in the WRA consists of Berryland and Mullica; Galloway; and Pawcatuck-Transquaking complex soils all of which are considered hydric soil indicators in Cape May County, NJ. The Berryland and Mullica; Galloway; and Pawcatuck-Transquaking complex soils are found along the WRA boundary in areas that have previously been determined to be wetlands as discussed in the LOI.



Map Unit Symbol	Map Unit Name	Est. Acres in WRA	Est Percent in WRA
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	0.3	1.6%
GamB	Galloway loamy sand, 0 to 5 percent slopes	0.00	0.1%
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	0.00	0.1%
UdrB	Udorthents, refuse substratum, 0 to 8 percent slopes	8.2	47.9%
UR	Urban land	8.6	50.4%
Total estimate for WRA		17.1	100.0%

#### Table 3.1-1 USDA Web Soil Survey Results within the WRA

#### 3.2 Wetland Delineation Field Survey

On June 15<sup>th</sup>, 2022, a wetland survey was conducted within the WRA and one wetland was verified (WL-1). Results from this survey are provided in Table 3.2-2. The wetland verification was done by walking along the outside edge of the wetland boundary described as WL in Figure 3.2-1. The majority of the WRA was found to be disturbed industrial land with little vegetation. The western and southern boundaries of the WRA, outside of the concrete barrier wall, were found to include upland and wetland habitat.





Figure 3.2-1 Field Survey Wetland Delineation Map

At the WL-1 location hydrophytic vegetation, hydric soil, and wetland hydrology were found and it was determined that the area sampled is a wetland. Normal circumstances appeared to be present at the time of the site visit. Surface water was present at a depth of 0.5 inch and both a water table and saturation were present to the surface so wetland hydrology was confirmed. Vegetation at this location included common reed (*Phragmites australis*) and saltmeadow cordgrass (*Spartina patens*). Saltmeadow cordgrass was the only dominant species classifying the dominant species as 100% OBL and therefore passing the dominance test. Saltmeadow cordgrass made up 95% of the herb stratum in the area which resulted in a prevalence index of 1.0 and a passing score on the prevalence index scale. These results confirm that hydrophytic vegetation is present in WL-1. The soil in WL-1 had histosol and hydrogen sulfide present, two hydric soil indicators that suggest hydric soil exists. The soil texture was fine throughout the sample area. The top two inches were a very light saturated silt with roots while the remaining 18 inches of the sampled pit consisted of a saturated silty organic loam. The surface layer of light-colored fine silt is presumably eroded material from upland. This eroded material does not appear to be impeding the growth or density of the saltmeadow cordgrass. This material was not actively eroding at the time of the site visit.

At the UPL-1 location hydrophytic vegetation, hydric soil, and wetland hydrology were not found and it was determined the area sampled is not a wetland. The slope is identified as old fill material due to presence of coal and coal cinders throughout the profile. Normal circumstances did not appear to be present at the time of the site visit. Vegetation at this location includes dominant species: American Sweetgum (*Liquidambar styraciflua*),



Red Cedar (*Juniperus virginiana*), Northern Bayberry (*Morella pensylvanica*), Hawkweed (*Hieracium lachenalia*), flax-leaf ankle-aster (*Ionactis linariifolia*), Virginia creeper (*Parthenocissus quinquefolia*), Poison ivy (*Toxicodendron radicans*) and non-dominant species include black cherry (*Prunus serotina*) and pitch pines (*Pinus* rigida). Trees in the vicinity are 30-35 ft in height and 6-10 inches in diameter. Only 3 of the 9 (33/3%) dominant species were classified as either OBL, FACW, or FAC so the vegetation did not pass the hydrophytic dominance test. The prevalence index was 3.63 so it is not  $\leq$ 3.0 and therefore does not pass the prevalence index criteria. These results confirm that hydrophytic vegetation is not present in the upland location. The soil in this area also did not have hydric indicators. The top 8 inches are coarse in texture with mixed fill consisting of coal chucks and cinders, sand, and silt with 20% rounded quartz pebbles. The remaining 12 inches of the pit sampled consisted of mixed fill with chucks of coal.

Table 0.2 2 Summary of Wedana Benneation Freid Garvey Results									
Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	NWI Classification	Cowardin Classification	Size (Acres)			
Wetland WL- 1	Surface Water (A1), Saturation (A3), Drift Deposits (B3), Hydrogen Sulfide Odor (C1), Saturation Visible on Aerial Imagery (C9)	Saltmeadow cordgrass (Spartina patens)	Histosol (A1), Hydrogen Sulfide (A4)	E2EM1Pd	Estuarine	0.11			

#### Table 3.2-2 Summary of Wetland Delineation Field Survey Results

#### 3.3 Wildlife

The majority of the WRA was found to be disturbed industrial land with little vegetation. The western and southern boundaries of the WRA, outside of the concrete barrier wall, were found to include upland and wetland habitat. While no species-specific wildlife studies were conducted, all wildlife observations made in association with the wetland delineation and ecological community mapping field studies were recorded. Birds were identified by song and/or direct observation; mammals were identified by direct observation, and reptiles were identified by direct observation or artifacts found such as shells and skin sheds.

Fish – No fish were observed during the site visit

Mammals – No mammals were observed during the sit visit.

Amphibians – Several hundred Fowler's toad (*Anaxyrus fowleri*) tadpoles were observed in the shallow puddles between and railroad tracks. Several dozen Fowler's toad toadlets were observed along the concrete barrier upland of the wetland edge during the site visit.

Reptiles – 1 female diamondback terrapin (*Malaclemys terrapin*) was observed laying eggs along the south side of theconcrete barrier around where the UPL-1 soil data was collected during the site visit. One Eastern box turtle (*Terrapene carolina*) shell and one recently shed 5 ft (approximately) Eastern rat snake (*Pantherophis alleghaniensis*) skin was found during the site visit along the eastern edge of the WRA.



Birds – 19 different bird species were observed during the site visit. The specific species can be found in Table 3.3-1

Table 3.3-1 Bird Species Observed in the WRA

Species Common	Species Scientific		
American robin	Turdus migratorius		
Barn swallow	Hirundo rustica		
Canada goose	Branta canadensis		
Carolina Wren	Thryothorus ludovicianus		
European starling	Sturnus vulgaris		
Field sparrow	Spizella pusilla		
Fish crow	Corvus ossifragus		
Glossy Ibis	Plegadis falcinellus		
Great Egret	Ardea alba		
Indigo Bunting	Passerina cyanea		
Laughing gull	Leucophaeus atricilla		
Mourning dove	Zenaida macroura		
Northern cardinal	Cardinalis cardinalis		
Northern mockingbird	Mimus polyglottos		
Osprey	Pandion haliaetus		
Raven	Corvus corax		
Red winged blackbird	Agelaius phoeniceus		
Rock pigeon	Columba livia		
Snowy egret	Egretta thula		

#### 4. Literature Cited

- Conserve Wildlife Foundation of New Jersey. (2022). *New Jersey endangered and threatened species field guide: Eastern box turtle*. Accessed July 1, 2022, at www.conservewildlife nj.org/species/fieldguide/.
- NJDEP-Watershed Restoration-Watershed Management Area 15 (state.nj.us)
- United States Army Corps of Engineers (USACE). (2005). *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification.* Don T. Riley, Major General, US Army, Director of Civil Works.
- United States Army Corps of Engineers (USACE). (2010). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble, ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Department of Agriculture (USDA): Natural Resources Conservation Service. (2015). *Web Soil Survey*. Retrieved from United States Department of Agriculture, Natural Resources Conservation Service: http://websoilsurvey.nrcs.usda.gov/\_Accessed 20 July 2022.
- Wildlife Field Guide for New Jersey's Endangered and Threatened Species Conserve Wildlife Foundation of New Jersey (conservewildlifenj.org)



#### Attachment A. USDA NRCS Web Soil Survey Custom Soil Resource Report



Page 1 of 3

Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey



USDA

### Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI				
BEXAS	Berryland and Mullica soils, 0 to 2 percent slopes, occasionally flooded	8.7	22.7%				
GamB	Galloway loamy sand, 0 to 5 percent slopes	1.7	4.5%				
PdwAv	Pawcatuck-Transquaking complex, 0 to 1 percent slopes, very frequently flooded	6.4	16.6%				
UdrB	Udorthents, refuse substratum, 0 to 8 percent slopes	8.7	22.6%				
UR	Urban land	12.0	31.2%				
USPSAS	Urban land-Psamments, sulfidic substratum complex, 0 to 2 percent slopes, occasionally flooded	0.9	2.4%				
Totals for Area of Interest		38.5	100.0%				


# Attachment B. Site Photographs



Photo Location Map



Photo 1 – Concrete lagoon on northern end of the review area. Water clear; about four feet deep.



**Photo 2** – Extensive saltmarsh and saltmeadow cordgrass wetland south and west of the former coal storage area. Herons and egrets observed feeding in the marsh.



Photo 3 – Extensive saltmarsh and saltmeadow cordgrass wetland with some open water patches.



Photo 4 – Ponded area on southerly side of review area; within previously mapped wetland boundary.



**Photo 5** – Former coal storage area with portion of old conveyor system.



 $\label{eq:photo-6-Edge} Photo \ 6-Edge \ of \ railroad \ tracks \ on \ the \ southeast \ corner \ of \ the \ review \ area, \ viewing \ south.$ 



Photo 7 - Edge of railroad tracks on the southeast corner of the review area, viewing north.



**Photo 8** - Wetland south of former coal storage area. This is where soil pits for WL-1 was collected looking south.



**Photo 9** - Wetland south of former coal storage area. This is where soil pits for WL-1 was collected looking west



Photo 10- Soil Pit WL-1



Photo 11- Soil Pit UPL-1



 $\label{eq:photo12} \mbox{Photo 12} - \mbox{Area east of the railroad track and west of former BL England golf course looking north$ 



 $\ensuremath{\text{Photo 13}}$  – Area East of the railroad track and west of former BL England golf course looking west



**Photo 14** – Area along northern boundary of former BL England golf course looking east and slightly north



**Photo 15** – Area along northern boundary of former BL England golf course looking north and slightly west



**Photo 16** -Diamond Back Terrapin female on south side of concreate wall in southeastern WRA near where soil pit data was collected



Photo 17 - Eastern rat snakeskin found along east side of the wetland review area



## **Attachment C. Wetland Delineation Datasheets**

WETLAND DETERMINATION DATA FORM – Atlantic and G	ulf Coastal Plain Region
RI Ended U. T. I	limmu Klistaa
Project/Site: DL L ng 14 nd City/County: Uppc/ 14/154	pl Cape 114 Sampling Date: 0113/20
Applicant/Owner: OTSTCd WINd	State: <u>NJ</u> Sampling Point: <u>ML-L</u>
Investigator(s): S. Stymoul, D. Htaly Section, Township, Range:	) ADDER TOWNSHIP
Landform (hillslope, terrace, etc.):	none): CONCAVE Slope (%): 0
Subregion (LRR or MLRA); LRR T Lat: 39,289015 Long	74.636846 Deturi
Soil Map Unit Name: Pawcatuck Transqualing Complex 0-170 slope	NWI classification: E2EM1Pd
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, e	xplain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locatio	ns, transects, important features, etc.
Hydrophytic Vegetation Present?     Yes     X     No     Is the Sampled Area       Hydric Soil Present?     Yes     X     No     within a Wetland?       Wetland Hydrology Present?     Yes     X     No     within a Wetland?	Yes X No
Remarks.	e
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
X Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vagetated Conceive Surface (88)
High Water Table (A2) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
X Saturation (A3) X Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3)	Drv-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4)	Cravfish Burrows (C8)
Z Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6)	X Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No Depth (Inches):	
Water Table Present? Yes No Depth (inches): To Surface	× I
Saturation Present? Yes X No Depth (inches): 10 Surface Wetland Hy (includes capillary fringe)	rdrology Present? Yes 🔼 No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	able:
Remarks:	

US Army Corps of Engineers

- ;

Atlantic and Gulf Coastal Plain Region - Version 2.0

a Stratum (Plot eize: 30	Absolute Dominant Indicator	Dominance Test worksheet:
22 Million (Flot 3/20)		Number of Dominant Species         That Are OBL, FACW, or FAC:
		Total Number of Dominant Species Across All Strata:
		Percent of Dominant Species That Are OBL, FACW, or FAC:(A/E
	··	Provalance Index warksheet:
		Total % Cover of: Multiply by:
	D - Total Cover	OBL species $\underline{qS}$ x1 = $\underline{qS}$
50% of total cover:	20% of total cover:	FACW species x 2 =
pling/Shrub Stratum (Plot size: 15 )		FAC species x 3 =
anti-dutent and a second s		FACU species x 4 =
		UPL species x 5 =
		Column Totals: $\underline{-15}$ (A) $\underline{-15}$ (B)
		Hydrophytic Vegetation Indicators
		1 - Ranid Test for Hydronhylic Vegetation
		2 - Dominance Test is >50%
		3 - Prevalence Index is ≤3.0 <sup>1</sup>
	= Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20% of total cover:	
Spanna patens	95 4 OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Phragmites australis	<u>S</u> N FACU	Definitions of Four Vegetation Strata:
		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless
		Sapilng/Shrub – Woody plants, excluding vines, less than 3 in DBH and greater than 3 28 ft (1 m) tail
		Herb – All herbaceous (non-woody) plants, regardles
		Woody vine - All woody vines greater than 3.28 ft in height.
Sub or total cover:	20% of total cover:	
Cour vine citation (Flot size)		
		Hydrophytic
	= Total Cover	Vegetation Y
50% of total cover:	20% of total cover:	Present? Yes <u>/</u> No
emarks: (If observed, list morphological adaptations be	elow).	

2

SOIL

.

2

÷

Profile Description: (Describe to the depth needed to document the indicator or confirm t	he absence	of Indicators )	
Depth Metrix Redex Eachuras		o macators.)	
(inches) Color (moist) % Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture	Pamarka	
0-27 716 ADUR 100	Line	Remarks	
<u>Va 110 1096 100</u>	FIAC	VERY IIINI Salvated	
		silf with roots	
21-2011 411 1048 100	hip	set worked without	
	Inc	Samara Silly	
		orcanic loam	
Type: C=Concentration D=Depletion RM=Reduced Model: MC-Marked Court C	2,	1 - 10	
Hydrie Sell Indicatorey (Applicable to all 1 BBs, unless otherwide a stable	Location:	PL=Pore Lining, M=Matrix.	
Vince our indicators. (Applicable to an LRRS, unless otherwise noted.)	Indicators	for Problematic Hydric Solis":	
A Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U)	1 cm I	Muck (A9) (LRR O)	
Histic Epipedon (A2) Thin Dark Surface (S9) (LRR S, T, U)	2 cm M	Auck (A10) (LRR S)	
Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A, B)		
X Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P. S. T)		
Stratified Layers (A5) Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)		
Crganic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6)	(MLRA 153B)		
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7)	Red P	arent Material (TF2)	
Muck Presence (A8) (LRR U)	Verv S	hallow Dark Surface (TF12)	
1 cm Muck (A9) (LRR P, T) Mari (F10) (LRR U)	Other	(Explain in Remarks)	
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)			
Thick Dark Surface (A12)	<sup>3</sup> Indic	ators of hydrophytic vegetation and	
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (I RR P T II)	wet	and bydrology must be prepert	
Sandy Mucky Mineral (S1) (LRR O. S) Delta Ochric (E17) (MI RA 151)	unl	and hydrology must be present,	
Sendy Gleved Matrix (S4) Reduced Vertic (E18) (ML PA 150A 150B)	uni	eas disturbed of problematic.	
Sandy Redox (S5) Reduced Venue (F10) (MERA TSUA, TSUB)			
Stripped Metrix (SS)	1		
Dark Surface (S7) (188 D. S. T. H)	149A, 153C	, 153D)	
Dark Surface (S7) (LRK P, S, I, U)			
Kesuricuve Layer (if observed);			
Type: have abserved			
Depth (inches):	lydric Soli	Present? Yes X No	
Remarks:			
	1 Dr	IL I	
The current CVER of LICHT COLORE	DAT	SIF IS	
The surface infer or rist colores	1 1		
messing laly and a marken of have	the	walcad Does	
presumably ended matchat from	JAC	Opitand's 10000	
	-	1111	
I NOT appear to be impeding the	GN	w FA/ density	
	J		
		Shit CANECAD	
of the cultime down dorderice	Dire	$\gamma hat a hat a hat a h$	
of the salt meadow cordgrass.	Due	S NOI appear so	
of the salt meadow cordgrass.	Due	s Noi appear so	
of the salt meadow cordgrass. be achively eroding at this time.	Due	s Not appear so	
of the salt meadow cordgrass. be achively eroding at this time.	Øve	s Not appear so	
of the salt meadow cordgrass. be achively eroding at this time.	Dve	ς κοι αρρεάτιο	
of the salt meadow cordgrass. be achively eroding at this time.	рvе	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	ς κοι αργεάντο	
of the salt meadow cordgrass. be achively eroding at this time.	Øve	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	ς κοι αργεαι το	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы арреаты	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы аррсаг э	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы аррсаг э	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы аррсаг э	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы аррсаг э	
of the salt meadow cordgrass. be achively eroding at this time.	Due	з кы аррсаг э	

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region         Project/Site:       BL England       City/county/Opper Tunshp/Cape/Maysampling Date:       C/15/22         Applicant/Owner:       Orsted Wind       State:       NJ Sampling Point:       UPL-I         Investigator(s):       State:       NJ Sampling Point:       UPL-I         Investigator(s):       State:       NJ Sampling Point:       UPL-I         Landform (hillslope, terrace, etc.):       Local relief (concave, convex, none):       Slope (%):       1070         Subregion (LRR or MLRA):       LRR T       Let:       39,289015       Long:       74,636846       Datum:         Soil Map Unit Name:       Udr B - Udor Hearts, treffice Substration       NWI classification:       NON E         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       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 lis the Sampled Area Hydric Soll Present? Yes No within a Wetland? Yes No X Wetland Hydrology Present? Yes No No Within a Wetland? Yes No X Remarks: The slope is presumably old fill material due to presence of coal and Cual cinders throughout the profile.
HYDROLOGY         Wetland Hydrology Indicators:       Secondary Indicators (minimum of two required)         Primary Indicators (minimum of one is required; check all that apply)
Fleid Observations:         Surface Water Present?       Yes       No       Depth (inches):

US Army Corps of Engineers

.

 $\mathbf{G}_{\mathbf{r}}$ 

Atlantic and Gulf Coastal Plain Region - Version 2.0

Sampling Point: UPL VEGETATION (Four Strata) - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species Prunus SCIDTIAL OFAC That Are OBL, FACW, or FAC: (A) -iguidamber stunici VIL 2 Total Number of Dominant thinerus uirciniana Species Across All Strate: (B) Percent of Dominant Species 5. That Are OBL, FACW, or FAC: (A/B) 6. Prevalence Index worksheet: Total % Cover of: Multiply by: 8 **OBL** species x 1 = = Total Cover 8 FACW species 50% of total cover: 20% of total cover: FAC species Sapling/Shrub Stratum (Plotisize: ć FACU species 1. UPL species 30 no 00 Column Totals: (A) (B) $\sim$ 3.11 PILL nensylvanica JUNINERU 'C iconigna 6 4. Prevalence Index = B/A = 5. Hydrophytic Vegetation Indicators: 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 8. 3 - Prevalence Index is ≤3.0<sup>1</sup> 75 = Total Cover Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) 50% of total cover: 3 / S 20% of total cover: Herb Stratum (Plot size: <sup>1</sup>Indicators of hydric soil and wetland hydrology must 1. IUNIDENS be present, unless disturbed or problematic. 2. Hieracium Definitions of Four Vegetation Strata: Lonactis 3. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or 4. more in diameter at breast height (DBH), regardless of height. 5. 6. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. 7 8. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 9. 10. Woody vine - All woody vines greater than 3.28 ft in height. 11. 12. 40 = Total Cover 50% of total cover: 20% of total cover: 30 Woody Vine Stratum (Plot size: 1. Parthenucissus guingvetolio 2. Tuxicodendron ans Vadic 3. 4. 5. Hydrophytic 20 = Total Cover Vegetation Present? Yes 20% of total cover: 50% of total cover: vicinity are 30-35' in height and 6 Remarks: (If observed, list morphological adaptations below). diameter

US Army Corps of Engineers

Atlantic and Gulf Coastal Plain Region - Version 2.0

a Guir Coastai Plain Region

SOIL		Sampling Point: UPL-1
Profile Description: (Describe to the dep	th needed to document the indicator or confirm	n the absence of Indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	<u>Color (moist) % Type' Loc<sup>2</sup></u>	Remarks
0-8 314 10YR 100		Coarse mixed hill with cual
7		chull and diaders
······		
		Sand FSITI with 2010
		nounded quartz peobles
8'-20" 513 104R 100		mixed bl with
		Chunks of Coal, dryo
'Type: C=Concentration, D=Depletion, RM	Reduced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis':
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, U	I) 1 cm Muck (A9) (LRR O)
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A, B)
Hydrogen Sulfide (A4)	Loarny Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	Red Parent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Mari (F10) (LRR U)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)		
Cosst Proirie Peday (A16) (MI BA 4504	Iron-Manganese Masses (F12) (LRR O, P,	Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (St) (I PP O S)	Delta Ochric (E17) (LRK P, 1, U)	wetland hydrology must be present,
Sandy Mucky Milleral (S1) (ERR 0, 3)	Enduced Visitia (F12) (MLRA 151)	uniess disturbed or problematic.
Sandy Redox (S5)	Electron Control (File) (MERA 150A, 150B)	0.6)
Stripped Matrix (S6)	Anomalous Bright Leamy Solis (F20) (MLP)	57) 5 1495 1530 1530
Stripped Matrix (S6) Dark Surface (S7) (LRR P. S. T. U)	Anomalous Bright Loamy Solis (F20) (MLR/	A 149A, 153C, 153D)
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed);	Anomalous Bright Loamy Solls (F20) (MLR/	A 149A, 153C, 153D)
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type:	Anomalous Bright Loamy Solls (F20) (MLR/	A 149A, 153C, 153D)
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches):	Anomalous Bright Loamy Solls (F20) (MLR)	Huddo Soll Present? Vos
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed):  Type: Depth (Inches):	Anomalous Bright Loamy Solls (F20) (MLR)	Hydric Soli Present? Yes No
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks:	Anomalous Bright Loamy Solls (F20) (MLR)	A 149A, 153C, 153D) Hydric Soll Present? Yes <u>No </u>
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Sof (S G DD Car ( )	Anomalous Bright Loamy Solls (F20) (MLR) NONE Obstrved be historic Bill mate	A 149A, 153C, 153D) Hydric Soli Present? Yes <u>No Χ</u>
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soills appcar to	Anomalous Bright Loamy Solls (F20) (MLR) NONE Obstrved be historic Rill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes <u>No X</u>
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soills appcar to	Anomalous Bright Loamy Solls (F20) (MLR) NONE Observed be historic Rill mate	Hydric Soll Present? Yes No $X$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	An 149A, 153C, 153D) Hydric Soll Present? Yes <u>No Χ</u>
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls Appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	Hydric Soll Present? Yes No X
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, 	Hydric Soll Present? Yes No $X$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, 	Hydric Soll Present? Yes No $X$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soills Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, 	Hydric Soll Present? Yes No $X$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE Observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No $\chi$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, 	A 149A, 153C, 153D) Hydric Soll Present? Yes No $\chi$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE Observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No $\chi$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE Observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No $\chi$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls Appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE Observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No $\chi$
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soll'S Appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	A 149A, 153C, 153D) Hydric Soll Present? Yes No X
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soil'S appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE Observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No X
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soil'S appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	A 149A, 153C, 153D) Hydric Soll Present? Yes No X
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Loamy Solls (F20) (MLR, NONE observed be historic Bill mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No X
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	A 149A, 153C, 153D) Hydric Soll Present? Yes No X Malo
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	A 149A, 153C, 153D) Hydric Soll Present? Yes No X Malo
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Loamy Solls (F20) (MLR) 	A 149A, 153C, 153D) Hydric Soll Present? Yes No X Malo
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Loamy Solls (F20) (MLR) none observed be historic All mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No X Malo
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Learny Solls (F20) (MLR) none observed be historic All mate	A 149A, 153C, 153D) Hydric Soll Present? Yes No X Malo
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Solls appcar to	Anomalous Bright Learny Solls (F20) (MLR) none observed be historic Aill mate	A 149A, 153C, 153D) Hydric Soli Present? Yes No X Male
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches): Remarks: Soils appcar to	Anomalous Bright Learny Solls (F20) (MLR) 	Hydric Soli Present? Yes No X

.

,

 $\overline{\mathcal{A}}$ 



# Attachment D. Letter of Interpretation (LOI)



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Land Use Regulation Mail Code 501-02A P.O. Box 420 Trenton, New Jersey 08625-0420 www.nj.gov/dep/landuse CATHERINE R. McCABE Commissioner

MAR 1 9 2019

PHILIP D. MURPHY Governor

SHEILA Y. OLIVER Lt. Governor

> Pete Murray c/o RC Cape May Holding LLC 900 N. Shore Road Beesley's Point, NJ 08223

> > RE: Freshwater Wetlands Letter of Interpretation: Line Verification File No.: 0511-03-0011.4 Activity Number: FWW180001 Applicant: RC CAPE MAY HOLDINGS, LLC Block(s) and Lot(s): [479, 74] [479, 76] [479, 76.01] [479, 94.01] Upper Twp., Cape May County

Dear Mr. Murray:

This letter is in response to your request for a Letter of Interpretation to have Division of Land Use Regulation (Division) staff verify the boundary of the freshwater wetlands and/or State open waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection, the U.S. Army Corps of Engineers Philadelphia and New York Districts, and the U.S. Environmental Protection Agency, the NJDEP, the Division is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate.

Based upon the information submitted, and upon site inspections conducted by Division staff on November 14 and December 27, 2018, the Division has determined that the wetlands and waters boundary line(s) are accurately shown on the plan maps entitled: "PLAN OF FRESHWATER/WATERS DELINEATION, B.L. ENGLAND GENERATING STATION, TAX BLOCK 479 TAX LOTS 74, 76, 76.01 & 94.01, TOWNSHIP OF UPPER, CAPE MAY COUNTY, NEW JERSEY ", consisting of seventeen (17) sheets, (all sheets) dated October 14, 2008, (all sheets) last revised August 17, 2018, and prepared by Hyland Design Group, Inc. and further identified as:

Sheet 1 of 17 – "EXISTING CONDITIONS KEY SHEET," Sheets 2 through 14 of 17 – "FRESHWATER WETLANDS/WATERS DELINEATION," Sheets 15 through 17 of 17 – "WETLANDS/WATERS DELINEATION BEARING & DISTANCES." The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above file number and the following note:

"Freshwater Wetlands/Waters Boundary Line as verified by NJDEP"

## Wetlands Resource Value Classification ("RVC")

In addition, the Division has determined that the resource value and the standard transition area or buffer required adjacent to the delineated wetlands are as follows:

Sheet 3 of 17:

- Ordinary: Line segments 230 through 232 and 249 through 252 [ No wetland buffer].
- **Exceptional**: All <u>remaining</u> **freshwater wetland** <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

## Sheet 7 of 17:

- Intermediate: Line segments 453 through 460 [50 ft. wetland buffer].
- **Exceptional**: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

## Sheet 8 of 17:

- Intermediate: Line segments 460 through 472, 453, 473 through 486, 487 through 506, 529 through 537 [50 ft. wetland buffer].
- **Exceptional**: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

## Sheet 9 of 17:

• **Exceptional**: All freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

## Sheet 10 of 17:

- Ordinary: Line segments 233 through 253, flag points W-453 through W-460 and W-461 through W-470 [No wetland buffer]
- Exceptional: Line segments 119 through 160, 168, 169 and 270 through 283 [150 ft. wetland buffer].
- <u>Intermediate</u>: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

## Sheet 11 of 17:

• **Exceptional**: All freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [150 ft. wetland buffer].

#### Sheet 12 of 17:

- Ordinary: Flag points W-1011 through W-1016 [No wetland buffer]
- Intermediate: All remaining freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

#### Sheet 13 of 17:

- Ordinary: Flag points W-1001 through W-1011 [No wetland buffer].
- <u>Intermediate</u>: All <u>remaining</u> freshwater wetland <u>delineation points</u> and <u>line segments</u> shown on the approved plan sheet referenced within this verification [50 ft. wetland buffer].

#### Sheet 14 of 17:

- Intermediate: Line segments 432 through 435 [No wetland buffer].
- Exceptional: Line segments 422 through 429 [150 ft. wetland buffer].
- <u>Mapped Coastal Wetlands</u>: Line segments 430 to 431 and 436 through 443 [a buffer of up to 300 feet may be imposed].

Please be advised, there are additional mapped coastal wetlands on Block: 479, Lots: 74, 76 and 76.01 as shown on Coastal Wetlands Map #161-2004 and as such is regulated pursuant to the Coastal Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.). Please be advised that if the proposed project is regulated under the Rules for Coastal Zone Management (N.J.A.C. 7:7E), then a buffer of up to 300 feet may be imposed adjacent to coastal wetlands.

RVC may affect requirements for wetland and/or transition area permitting. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-9 and 10), the types of Statewide General Permits available for the property (see N.J.A.C. 7:7A-5 and 7) and any modification available through a transition area waiver (see N.J.A.C. 7:7A-8). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Wetlands resource value classification is based on the best information available to the Department. The classification is subject to reevaluation at any time if additional or updated information is made available, including, but not limited to, information supplied by the applicant.

Under N.J.S.A. 13:9B-7a(2), if the Division has classified a wetland as exceptional resource value, based on a finding that the wetland is documented habitat for threatened and endangered species that remains suitable for use for breeding, resting or feeding by such species, an applicant may request a change in this classification. Such requests for a classification change must demonstrate that the habitat is no longer suitable for the documented species because there has been a change in the suitability of this habitat. Requests for resource value classification changes and associated documentation should be submitted to the Division at the address at the top of this letter.

#### **General Information**

Pursuant to the Freshwater Wetlands Protection Act Rules, you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter unless it is determined that the letter is based on inaccurate or incomplete information. Should additional information be

disclosed or discovered, the Division reserves the right to void the original letter of interpretation and issue a revised letter of interpretation.

Regulated activities proposed within a wetland, wetland transition area or water area, as defined by N.J.A.C. 7:7A-2.2 and 2.3 of the Freshwater Wetlands Protection Act rules, require a permit from this office unless specifically exempted at N.J.A.C. 7:7A-2.4. The approved plan and supporting jurisdictional limit information are now part of the Division's public records.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. This determination of jurisdiction extent or presence does not make a finding that wetlands or water areas are "isolated" or part of a surface water tributary system unless specifically called out in this letter as such. Furthermore, obtaining this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

Please be advised that any surface water features on the site or adjacent to the site may possess flood hazard areas and/or riparian zones and development within these areas may be subject to the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. The Division can verify the extent of flood hazard areas and/or riparian zones through a flood hazard area verification under the application procedures set forth at N.J.A.C. 7:13-5.1.

#### Recording

Within 90 calendar days of the date of this letter, the applicant shall submit the following information to the clerk of each county in which the site is located, and shall send proof to the Division that this information is recorded on the deed of each lot referenced in the letter of interpretation:

- 1. The Department file number for the letter of interpretation;
- 2. The approval and expiration date of the letter of interpretation;
- 3. A metes and bounds description of the wetland boundary approved under the letter of interpretation;
- 4. The width and location of any transition area approved under the letter of interpretation; and
- 5. The following statement: "The State of New Jersey has determined that all or a portion of this lot lies in a freshwater wetland and/or transition area. Certain activities in wetlands and transition areas are regulated by the New Jersey Department of Environmental Protection and some activities may be prohibited on this site or may first require a freshwater wetland permit. Contact the Division of Land Use Regulation at (609) 292-0060 or <u>http://www.nj.gov/landuse</u> for more information prior to any construction onsite."

Failure to have this information recorded in the deed of each lot and/or to submit proof of recording to the Division constitutes a violation of the Freshwater Wetlands Protection Act rules and may result in suspension or termination of the letter of interpretation and/or subject the applicant to enforcement action pursuant to N.J.A.C. 7:7A-22.

#### Appeal Process

In accordance with N.J.A.C. 7:7A-21, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing

4

Requests, Mail Code 401-04L, P.O. Box 402, 401 East State Street, 7<sup>th</sup> Floor, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist found at <u>www.state.nj.us/dep/landuse/forms</u>. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at <u>www.state.nj.us/dep/bulletin</u>. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website <u>www.nj.gov/dep/odrn</u> for more information on this process.

Please contact April Grabowski of our staff by e-mail at <u>April.Grabowski@dep.nj.gov</u> or by phone at (609) 777-0454 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.



Sincerely,

Bob Kozachek, Environmental Specialist 3 Division of Land Use Regulation

c: Municipal Clerk Municipal Construction Official Agent (original)

ken segar en sen syne segen en en segar en en alte segar segenente sente segar en segar en andres fir ofte bulantis succionents of second second second second second from Second Second first efficientiss en second first second first second 

and the spectra spectra property of the second states to Set the second with the second se ette produktionette internette ette ette HANNAL PRESS

Sector Starley a particular





Supplemental IBSP Delineation Memo



#### Memorandum DRAFT

Date:	Wednesday, November 30, 2022
Project:	Ocean Wind 1 Offshore Wind Farm Project
To:	USACE
From:	HDR Engineering Inc.

Subject: Island Beach State Park(ISBP) Wetland Delineation Memo

The purpose of this memo is to identify specific changes made to the Ocean Wind 1 Wind Farm Project (Project) IBSP export cable route since the April 2022 submission of the USACE permit. Wetland A, B, C, and D were included in the April 2022 submission but the proposed export cable route has since changed and, therefore, HDR wetland scientist conducted further investigation at the IBSP site in April 2022 to account for the expanded impacts at Wetland E, F, and G. This memo includes descriptions of Wetland E, D and F as well as pictures, figures, and datasheets .

<u>Wetland E</u> – The area delineated as Wetland E is a 0.16 acre Palustrine Emergent/Scrub-Shrub, Broad-Leaved Deciduous Vegetation, Seasonally Flooded/Saturated based on Cowardin et al. (1979). Wetland E is located on the east side of Shore Road adjacent to Swimming Area 2 Parking Area. It is dominated by *Acer rubrum (FAC), Vaccimium corymbosum (FACW), Phragmites australis (FACW).* Soils in Wetland E were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include surface water, saturation and water-stained leaves. A summary of wetland indicators is provided in Table 3.2.2-2.

An upland observation point was taken outside of the Wetland E and no wetland hydrology indicators were observed. Dominant species within the upland area included eastern red cedar and black cherry in the tree stratum and Virginia creeper in the woody vine stratum which does not provide a hydrophytic vegetation indicator through the dominance test and prevalence index. The soils did not meet the criterion for hydric soils.

**Wetland F** – The area delineated as Wetland F is a 0.13 acre Palustrine Emergent/Scrub-Shrub, Broad-Leaved Deciduous Vegetation, Seasonally Flooded/Saturated based on Cowardin et al. (1979). Wetland F is located on the east side of Shore Road adjacent to Swimming Area 2 Parking Area and south of Wetland E. It is dominated by *Vaccimium corymbosum (FACW), Phragmites australis (FACW),* and *Smilax rotundifolia (FAC).* Soils in Wetland F were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include high water table within 4 inches of the surface, saturation and water-stained leaves. A summary of wetland indicators is provided in Table 3.2.2-3.

An upland observation point was taken outside of the Wetland F and no wetland hydrology indicators were observed. Dominant species within the upland area included American holly in the tree stratum, beach plum (*Prunus maritima*) and wooly beachheather (*Hudsonia tomentosa*) in the shrub stratum, and dandelion (*Taraxacum officinale*) which does not provide a hydrophytic vegetation indicator through the dominance test and prevalence index. The soils did not meet the criterion for hydric soils.

Wetland G – The area delineated as Wetland G is a 0.58 acre Palustrine Emergent/Scrub-Shrub, Broad- Leaved Deciduous Vegetation, Seasonally Flooded/Saturated based on Cowardin et al. (1979). Wetland G is located on the east side of Shore Road adjacent to the southern auxiliary parking lot of Swimming Area 2 south of Wetlands E and F. It is dominated by highbush blueberry (*Vaccimium corymbosum; FACW*) and swamp rose (*Rosa palustris; OBL*), and common reed (*FACW*) in the herbaceous stratum, and common greenbrier (*FAC*) in the vine stratum. Soils in Wetland G were indicative of hydric soils due to the presence of a depleted matrix (Indicator F3). Hydrology indicators include high water marks. A summary of wetland indicators is provided in Table 3.2.2-2.

## Ocean Wind 1 An Ørsted & PSEG project

An upland observation point was taken outside of the Wetland F and no wetland hydrology indicators were observed. Dominant species within the upland area included eastern red cedar in the tree stratum, and American beachgrass (*Ammophila breviligulata*) which does not provide a hydrophytic vegetation indicator through the dominance test and prevalence index. The soils did not meet the criterion for hydric soils.

Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres) or Linear Feet (LF)	NWI Cowardin Classification	Field Determined Cowardin Classification
Wetland E	Surface Water (A1), saturation (A3), water- stained leaves (B9)	Acer rubrum (FAC), Vaccimium corymbosum (FACW), Phragmites australis (FACW)	Depleted matrix (F3)	0.16 acre	None	PEM/SS1E
Wetland F	High water table (A2), saturation (A3), water- stained leaves	Vaccimium corymbosum (FACW), Phragmites australis (FACW), Smilax rotundifolia (FAC)	Depleted matrix (F3)	0.13 acre	None	PEM/SS1E
Wetland G	Water marks (B1)	Rosa palustris (OBL), Vaccimium corymbosum (FACW), Phragmites australis (FACW), Smilax rotundifolia (FAC)	Depleted matrix (F3)	0.58 acre	None	PEM/SS1E
			Totals for Site	0.58 acres		

## Table 3.2.2-3. Summary of Wetland Delineation Field Survey Results

FACW= Facultative Wetland species

FAC= Facultative species

OBL= Obligate species

FACU= Facultative Upland species





Figure 3.1.2-10. NJDEP Wetlands Map- IBSP





Figure 3.1.2-11. NWI Wetlands Map- IBSP





Figure 3.1.2-12. FEMA PFIRM Flood Hazard Area Map- IBS





Figure 3.2.2-3. Delineated Wetlands and Watercourses Map- IBSP





FX Orsted

OCEAN WIND - OYSTER CREEK DELINEATED WETLANDS AND WATERCOURSES MAP

DOW\_WETLAND AND NW/TERCOLARS BELINEATON REPORT

Photograph Location Map
















WETLAND DETERMINATION DATA	FORM — Atlantic and Gulf	Coastal Plain Region
Project/Site. Island Beach State Park	City/County. Seaside Park, (	Dcean Sampling Date! 4/6/2022
ApplicanVOwner: Ocean Wind, LLC	Sta	te: NJ Sampling Point: WLE-
Investigator(s)! <u>Steve Seymour, James Eberhardt</u>	_Section, Township, Range: <u>Sea</u>	side Park
Landform (hillslope, terrace, etc.). Level	Local relief (concave, convex. nor	e): Level Slope (%): 0
Subregion (LRR or MLRA). <u>LRR T Lat! 39.8</u> Soil Map Unit Name. Hooksan fine sand, 2-10% slopes		74.088165
Are climatic hydrologic conditions on the site typical for this time of	fyear? Yes <u>X</u> No <u>(</u> If	no, explain in Remarks.)
Are VegetationSoilor Hydrologysignificant	tly disturbed? Are "Normal C	Circumstances"present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally p	oroblematic? (If needed. exp	lain any answers in Remarks.)
SUMMARY OF FINDINGS — Attach site map showing	g sampling point locations,	transects, important features, etc.
Hydrophytic Vegetation Present?       Yes X Na         Hydric Soil Present?       Yes X No         Wetland Hydrology Present?       Yes X No         Remarks!       There is a concrete culvert headwall at the north end	Is the Sampled Area within a Wetland? d of the wetland beneath th	Yes X NO POPULATION NO POPULATICON NO POPULATICON NO POPULATICON NO POPULATICON NO POPULATICON POPUL
West toward Barnegat Bay		
Primary Indicators fminingly of one is required; check all that apply	<u>د</u> ۱	Surface Spit Cracks (B6)
X Surface Water (A1)	313)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Mart Deposits (B	15) (LRR U)	Drainage Patterns (B10)
X Saturation (A3) Hydrogen Sulfide	Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizos	pheres along Living Roots (C3)	Dry—Season Water Table (C2)
Sediment Deposits (B2) Presence of Rec	luced Iron tC4)	Crayfish Burrows (CB)
Drift Deposits (B3) Recent Iron Redu	uction in Tilled Soils (C6)	Saturation Visible an Aerial Imagery (Cg)
Algal Mat or Crust (B4) I hin Muck Surfa	ce (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Imageny (B7)	Remarks)	Shallow Aquitato (D3)
X Water-Stained Leaves (B9)		Sphag num moss (D8) (LRR 7, U)
Field Observations: Surface Water Present? Ves No X Dopth (inches):		
Water Table Present? Yes X No Depth (inclusion).	ches): 1" Saturation	
Present? Yes X No Depth (in	nches): <u>1"</u> (includes Wetlan	d Hydrology Present? Yes_X_No
Capillary tringe) Describe Recorded Data tstream gauge. monitoring well, aerial p	hotos, previous inspections), if ava	ailable.
Remarks:		
Water filled soil pit to within 1" of around surfa	ace. Shallow ponded areas	within wetlands are present. Verv
hoovy rainfall (~1") in prior 24 hrs		
neavy rannan (~ r ) in prior 24 hrs.		

VEGETATION (Four Strata) — Use scientific names of p

s of plants		

		Dominance Test worksheet
Tree Stratum (Plot size: 30 ft	% Cover Species+ Status	Dominance rest worksheet:
1. <u>Acer rubrum</u>	40 Y FAC 2.	Number of Dominant Species       4         That Are OBL, FACW, or FAC:      (A)
	3	Total Number of Dominant
	4	Species Across All Strata: <u>5</u> (B)
	5	Percent of Dominant Species
		That Are OBL, FACW, or FAC: (A/B)
		Pre valenc e Index worksheet:
7		Total % Cover of Multiply by
8.		OBL species x 1=
	40 = Total Cover	FACW species <u>100</u> x 2 = <u>200</u>
50% oftotal cover	20% of total cover:	FAC species <u>70</u> x 3 = <u>210</u>
Sentin a/Shrub Stratum /Diat size: 15ft	20 /0 01 10121 00 001.	FACU species $20 \times 4 = 80$
<u>Sapin d'Sning Shatann</u> (Fior Size, 1911		$\frac{1}{1} \text{PL species} \qquad x5 =$
		Column Totals: $190$ (A) $490$ (B)
	3	
	4	Prevalence Index =B/A = 2.58
	5	Hydrophytic Vegetation Indicators:
		1 - Rapid Test for Hydrophilic Vegetation 2
6		- Dominance Test is>50%
7		3 - Prevalence Index is fi3.0'
8		Problematic Hydrophilic Vegetation' Explain)
	60 = Total Cover	, , ,
50% of total cover:	20% of total cover:	Indicators of hydric soil and wetland hydrology must
Herb Stratum (Plot size: 5 ft )		be present, unless disturbed or problematic.
Phraomites australis	40 Y FACW 2	Definitions of Four Vegetation Strata:
	<u>-+0</u> <u>-</u> - <u>7,017</u> <u>2</u> .	Tree — Woody plants, excluding vines, 3 in (7.6 cm) or
	3	more in diameter at breast height (DBH), regardless of
	4	height.
	5	Sapling/Shrub — Woody plants, excluding vines, less
	6	than 3 in. DBH and greater than 3.28 ft (1 m) tall.
	7	
	8	Herb — All herbaceous (non-woody) plants, regardless or
		Size, and woody plants less than 0.20 it tail.
	10.	Woody vine — All woody vines greater than 3.28 ft in
11.		height.
· · · ·	40 = Total Cover	
50% oftotal cover	20% of total cover:	
Woody Vino Stratum (Plot size: 30 ft		
<u>woody vine stratum</u> (Flot size. <u>oo n</u>	30 Y FAC	
2 Lonicera janonica	$\frac{20}{20} \times \frac{100}{100} $	
	<u> </u>	
	4	
	<u> </u>	Hydrophytic
5	50	Vegetation Xee X No
	= Total Cover	Present? res <u>r</u> ivo
50% of total cover:	20% of total cover:	
Remarks: (If observed, list morphological adaptation	is b <del>elow).</del>	
multi-trunked red maples; buttressed surfa	ace roots on red maples	

WLE-WL

Sampling Point: \_\_\_\_\_

Profile Description: (Describe to the de	oth needed to docu	iment the	indicator	or confir	m the absence of	of indicators.)
Depth <u>Matrix</u>	Red	ox Feature	s Turno'		Toyturo	Bomorko
0-4" 3/1 10YR 100	Color (moist)	70	Туре	LOC	fine sand	Moist organic loam
<u>4-11"</u> <u>4/2 10YR</u> 100	·				<u></u> . sand	Silty sand
<u>11-20"</u> 6/2 10YR 90	6/4 10YR	10	RM	M	sand	Silty sand
	-				Sand	Sitty Sand
				_		
		_		_		
'Type: C=Concentration, D=Depletion, RM	- I=Reduced Matrix, N	 IS=Maske	d Sand Gr	ains.	Location:	PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all	LRRs, unless othe	rwise not	ed.)		Indicators f	or Problematic Hydric Soils':
Histosol (A1)	Polyvalue E	Below Surf	face (58) (l	LRR S, T	, U) 1 cm M	luck (A9) (LRR 0)
Histic Epipedon (A2)	Thin Dark S	Surface (5	9)(LRR S	, T, U)	2 cm N	luck (A10) (LRR S)
Black Histic (A3)	Loamy Muo	cky Minera	al (F1) (LR	R0)	Reduce	ed Vertic (F18) (outside MLRA 1SOA, B)
Hydrogen Sulfide (A4)	Loamy Gley	yed Matrix	(F2)		Piedmo	Int Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Organic Bodies (A6) (LRRP, T, LI)	A Depleted Mi Reday Dark	atrix (F3) (Surface (	(F6)		Anoma (MLE	IOUS Bright Loamy Solis (F20)
5 cm Mucky Mineral (A7) (LRR P. T. U	J) Depleted D	ark Surfac	e (F7)		Red Pa	arent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Dep	ressions (	F8)		Very S	hallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Mart(F10)	(LRRU)	,		Other (E	Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted C	Ochric (F1	1) (M LR	A151)		
Thick Dark Surface (A12)	Iron-Manga	nese Mas	sses (F12)	(LRR 0,	P, T) 'Indica	tors of hydrophilic vegetation and
Coast Prairie Redox (A16) (MLRA1SC	DA) Umbric Sur	face (F13)	) (LRR P, 1	r, U)	wet	and hydrology must be present,
Sandy Mucky Mineral (S1) (LRR 0, S Sandy Gloved Matrix (54)	) Deita Ochrie Reduced V	C (F17) (M /ortic (E19	ILKA 151) 8) (MI DA	1504 1	UNIE	ss disturbed of problematic.
Sandy Bedox (55)	Piedmont F	Floodplair	S (IVILINA Soils (F	19) (M I I	RA 149A)	
Stripped Matrix (56)	Anomalous	Bright Loa	amv Soils (	(F20) (ML	_RA 149A. 153C. 1	153D)
Dark Surface (57) (LRR P, S, T, U)	)	5	, , , , , , , , , , , , , , , , , , ,	-71	- , ,	
Restrictive Layer (if observed):	None obser	ved				
l ype:					Hydric Soil [	Present? Ves X No
Remarks:						
Nemarka.						

Project/Site. Island Beach State Park	City/County.	Seaside Park, (	Dcean	Sampling	Date!04/	/06/2022
ApplicanVOwner: <u>Orsted Ocean Wind, LLC</u> Investigator(s)! <u>Steve Seymour, James Eberh</u>	ardtSection. Tow	State: nship, Range: <u>Seasi</u> r	<u>NJ</u> de Park	Sampling	Point:	W <u>LE-UPL</u>
Landform (hillslope, terrace, etc.). <u>Level</u> Subregion (LRR or MLRA). <u>LRR T</u> Soil Map Unit Name. <u>Hooksan fine sand, 0-1(</u>	Local relief (c Lat!39.850693 0% slope	oncave, convex. none) long:74.(	<sub>:</sub> <u>Level</u> )88175 IWI classifi	cation. <u>Nor</u>	-Slope -Datum: 1e	(%): <u>0</u> WGS84
Are climatic hydrologic conditions on the site typical for Are VegetationSoilor Hydrology Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS — Attach site ma	or this time of year? Yes	✓ No(If no, Are "Normal Circu (If needed. explain point locations, tra	explain in mstances" n any answ nsects, i	Remarks.) present? Yes ers in Remark mportant f	X s.) reatures	_ No
Hydrophytic Vegetation Present?       Yes         Soil Present?       Yes         Wetland Hydrology Present?       Yes         Remarks!       Yes	_NaX Hydric Is the _NoX within _No_X	ร Sampled Area า a Wetland?	Yes	<u>NO_X_</u>		
HYDROLOGY						
Wetland Hydrology Indicators:		Sec	ondary Ind	icators Iminir	num of tw	o required}

would in yarology malouto	10.			
Primary Indicators fmininluic	of one is required: check	all that apply)		Surface Spit Cracks (B6)
Surface Water (A1)	Aqua	a(ie Fauna (B13)		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Mart	Deposits (B15) (LRR U)		Drainage Patterns (B10)
Saturation (A3)	Hydro	ogen Sulfide Odor (C1)		Moss Trim Lines (B16)
Water Marks (B1)	Oxid	ized Rhizospheres along Living Ro	oots (C3)	Dry—Season Water Table (C2)
Sediment Deposits (B2)	Pres	ence of Reduced Iron tC4)		Crayfish Burrows (CB)
Drift Deposits (B3)	Rece	ent Iron Reduction in Tilled Soils (C	6)	Saturation Visible an Aerial Imagery (Cg)
Algal Mat orCrust (B4)	Thin	Muck Surface (C7)		Geomorphic Position (D2)
Iron Deposits (B5)	Othe	er (Explain in Remarks)		Shallow Aquitard (D3)
Inundation Visible on Aer	ial Imagery (B7)			FAC-neutral Test (D5)
Water-Stained Leaves (B	9)			Sphag num moss (D8) (LRR 7, U)
Field Observations:				
Surface Water Present?	Yes_ No_X_ Depth	(inches):		
Water Table Present?	Yes No $\underline{X}$ Depth (inch	nes):		
Saturation Present? (includes capillary fringe)	Yes No $\underline{X}$ Depth (inc	ches):	Wetland H	ydrology Present? YesNo_X
Describe Recorded Data tstr	eam gauge. monitoring w	vell, aerial photos, previous inspec	ctions), if av	vailable.

Remarks:

very heavy rainfall (~1") in prior 24 hours

### VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: WLE-UPL

Tree Stratum (Plot size: 30 ft	Wh Cove	r Snecies	+ Status	Dominance rest worksneet.
	60	v	FACIL	Number of Dominant Species
2 Prunus serotina	20	Y	FACU	That Are OBL, FACW, or FAC: (A)
2	20			Spacies Across All Strate: 6 (B)
4				Percent of Dominant Species
6		-		That Are OBL FACIAL as FAC: 50
b				ThatAreOBL, FACW, or FAC: (A/B)
7				Pre valenc e Index worksheet:
8			-	Total % Cover of Multiply by
5.	80	= Total Co	ver	OBL species x1 =10
50% offetel environ	205	(intel acus		FACW species 55 x 2 =
Saplin o/Shaib Stratum /Plat size: 15 ft	20% 0	i total cove		FAC species
1. Vaccinium corymbosum	20	Y	FACW	FACU species 100 x4 = 400
				UPL species x 5 =
2				Column Totals: 200 (A) 645 (B)
3		_		
4			_	Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophilic Vegetation
7		_	_	X 2-Dominance Testis>50%
8				X 3-Prevalence Index is fi3.0'
	20			Dephismatic Undephilis Vessetation! Evaluity
	20	= I otal Co	ver	Problematic Hydrophilic Vegetation Explain)
50% oftotal cover:	20% o	ftotal cove	ver 	Problematic Hydrophilic Vegetation Explain)
50% of total cover:	20% o	ftotal cove	ver ::	Indicators of hydric soil and wetland hydrology must
50% oftotal cover:	20% o 35 Y F	ftotal cove	ver 	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% oftotal cover:	20% o	Flotal cove	ver 	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
50% oftotal cover:	20% o 20% o 	FACW	ver 	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
50% oftotal cover:	20% o 35 Y F	Flotal Cove	ver 	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
50% oftotal cover:	20% o 20% o 	ACW		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. (7.8 cm) or more in diameter at breast height (DBH), regardless of height.
50% oftotal cover:		ACW	ver	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. (7.8 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub — Woody plants, excluding vines, less
50% oftotal cover:	20% o 35 Y E	ACW	ver	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. (7.8 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.
50% oftotal cover:	20% o 20% o 	ACW	ver	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 behaceous (non-woody) plants, regardless
50% oftotal cover:	20% • 35 Y F	ACW	ver	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.
50% oftotal cover:         Herb Stratum (Plot size: 5 ft)         1. Phragmites australis         2.         3.         4.         5.         6.         7.         8.         9.         10.	20% • 35 Y F	ACW	ver	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. (7.8 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.
50% oftotal cover:	20% • 35 Y F	ACW	ver	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. (7.8 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.
50% oftotal cover:	20% • 35 Y F	ACW	ver	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. (7.8 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.
50% oftotal cover:	20% • 35 Y F	= Total Co ftotal cover	ver	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.
50% oftotal cover:	20% • 35 Y F	ACW	ver	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.
50% oftotal cover:	20% o	= Total Co ftotal cove <u>ACW</u> 	ver	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.
50% oftotal cover:	20% • 35 Y F 	ACW	ver	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.
50% oftotal cover:	20% • 35 Y F 	ACW	ver	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.
50% oftotal cover:         Herb Stratum (Plot size: 5 ft)         1. Phragmites australis         2	20% o 20% o 	ACW Total Cover ACW 	ver 	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. (7.8 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.
50% oftotal cover:         Herb Stratum (Plot size: 5 ft)         1. Phragmites australis         2	20% o 20% o 	ACW Total cover ACW 	ver 	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. (7.8 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.
50% oftotal cover:         Herb Stratum (Plot size: 5 ft)         1. Phragmites australis         2	20% o 20% o 	ACW = Total Co ftotal cover ACW =	ver 	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. (7.8 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.
50% oftotal cover:         Herb Stratum (Plot size: <u>5 ft</u> )         1. Phragmites australis         2.         3.         4.         5.         6.         7.         8.         9.         10.         11.         12.         50% oftotal cover.         S0% oftotal cover.         9.         10.         11.         12.         50% oftotal cover.         Voody Vine Stratum (Plot size: <u>30 ft</u> )         1. Parthenocissus quinquefolia         2. Smilax rodundifolia	<u>20</u> 20% o 35 Y F       	ACW 	ver 	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. (7.8 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.
50% oftotal cover:         Herb Stratum (Plot size: 5 ft)         1. Phragmites australis         2.         3.         4.         5.         6.         7.         8.         9.         10.         11.         12.         50% oftotal cover:         50% oftotal cover:         9.         10.         11.         12.         50% oftotal cover:         Voody Vine Stratum (Plot size: 30 ft)         1. Parthenocissus quinquefolia         2. Smilax rodundifolia	20% o 20% o 	= Total Co ftotal cover <u>ACW</u> =	ver 	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

Depth Matrix Redox Features		
(inches) Color(moist) % Color(moist) % Type' Loc	Texture	Remarks
0"-8" 4/2 10YR 100	fine sand	sandy loam
8"-15" 4/2 10YR 100	sand	sand
	<u>Jana</u>	
<u>15°-20° 4/2 10YR 100</u>	sand	silty sand with 20% rounded
		qualiz peoples
	_	
'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.	'Locatio	n: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicator	s for Problematic Hydric Soils':
Histosol (A1) Polyvalue Below Surface (58) (LRR S, T,	U) 1 cm	Muck (A9) (LRR 0)
Histic Epipedon (A2)Thin Dark Surface (59) (LRR S, T, U)	2 cm	Muck (A10) (LRR S)
Black Histic (A3) Loamy Mucky Mineral (F1) (LRR0)	Redu	iced Vertic (F18) (outside MLRA 1SOA,B)
Stratified Lavers (A5) Depleted Matrix (F2)	Anor	nalous Bright Loamy Soils (F19) (LRR P, S, T)
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6)	(M	LRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7)	Red	Parent Material (TF2)
Muck Presence (A8) (LRR U) Redox Depressions (F8)	Very	Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T) Mart (F10) (LRR U)	Othe	(Explain in Remarks)
Thick Dark Surface (A12) Iron-Manganese Masses (E12) (I RR 0. F	PT) 'Ind	cators of hydrophilic vegetation and
Coast Prairie Redox (A16) (MLRA 1SOA) Umbric Surface (F13) (LRR P, T, U)	, . ,	etland hydrology must be present,
Sandy Mucky Mineral (S1) (LRR 0, S) Delta Ochric (F17) (MLRA 151)	u	nless disturbed or problematic.
Sandy Gleyed Matrix (54) Reduced Vertic (F18) (MLRA 1SOA, 1: Diadward Fleyed Vertic (F18) (MLRA 1SOA, 1: Reduced Vertic (F18) (MLRA 1SOA, 1:	50B)	
Sandy Redox (55) Pleamont Floodplain Solis (F19) (MLF Stripped Matrix (56) Anomalous Bright Loamy Soils (F20) (ML	RA 149A) RA 149A 153(	(153D)
Dark Surface (57) (LRR P. S. T. U)	1011 1000	, 1000)
Restrictive Layer (if observed):		
Type:		
Depth (inches):	Hydric So	il Present? Yes No X
	Tryune de	
Remarks:		
Remarks:	Tryune oe	
Remarks:		

Project/Site. Island Beach State Park City/	County. Seaside Park, Ocean Sampling Date! 04/06/2022
ApplicanVOwner: Orsted OceanWind, LLC Investigator(s)! Steve Seymour, James Eberhardt Section	
Landform (hillslope, terrace, etc.). <u>level</u> Local Subregion (LRR or MLRA). <u>LRR T</u> Lat! <u>39.8490</u> Soil Map Unit Name Hooksan fine sand. 2-10% slope	relief (concave, convex.none): <u>level</u> Slope (%): <u>0</u> 096 Long: <u>-74.088368</u> Datum: W <u>GS84</u>
Are climatic hydrologic conditions on the site typical for this time of year?         Are VegetationSoilor Hydrologynaturally problem	Yes_X       No(If no, explain in Remarks.)         rbed?       Are "Normal Circumstances" present? YesNoX         atic?       (If noeded. explain any answers in Remarks.)
SUMMARY OF FINDINGS — Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?       Yes X       Na         Hydric Soil Present?       Yes X       No         Wetland Hydrology Present?       Yes X       No	Is the Sampled Area within a Wetland? Yes XNO
Remarks! Wetland is influenced by sheet flow runoff from adj	acent paved roadway.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators I minimum of two required}	
Primary Indicators fmininluic of one is required	check all that apply)	Surface Spit Cracks (B6)	
Surface Water (A1)	Aqua(ie Fauna (B13)	Sparsely Vegetated Concave Surface (B8)	
X High Water Table (A2)	Mart Deposits (B15) (LRR U)	Drainage Patterns (B10)	
X Saturation (A3)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)	
Water Marks (B1)	Oxidized Rhizospheres along Living Roots (C3)	Dry—Season Water Table (C2)	
Sediment Deposits (B2)	Presence of Reduced Iron tC4)	Crayfish Burrows (CB)	
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible an Aerial Imagery (Cg)	
Algal Mat orCrust (B4)	Thin Muck Surface (C7)	Geomorphic Position (D2)	
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)		FAC-neutral Test (D5)	
X Water-Stained Leaves (B9)		Sphag num moss (D8) (LRR 7, U)	
Field Observations:			
Surface Water Present? Yes_ No_X_	Depth (inches):		
Water Table Present? Yes <u>X</u> No	Depth (inches): <b>4"</b> Saturation		
Present? Yes X No capillary fringe)	Depth (inches): (includes Wetland	Hydrology Present? YesX No	
Describe Recorded Data tstream gauge. mon	toring well, aerial photos, previous inspections), i	available.	
Remarks:			

Water filled soil pit to within 4" of ground surface, Very heavy rainfall (~1") in prior 24 hours.

Sampling Point: WLF-WL

## VEGETATION (Four Strata) —Use scientific names of plants.

	Absolute	e Domina	ant Indicator	Dominance Test worksheet
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>	% Cov	er Speci	es+ Status	Number of Dominant Species
1.				That Are OBL, FACW, or FAC: (A)
2				
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species 100
5				That Are OBL, FACW, or FAC: (A/B)
				Pre valenc e Index worksheet:
7				Total % Cover of Multiply by
9				
0.	0	- Total		$120 \times 240$
		_= Totai	Cover	FACW species $\frac{120}{20}$ x 2 = $\frac{240}{60}$
50% oftotal cover:	20% c	of total cov	/er:	FAC species $20 x 3 = 00$
<u>Saplin q/Shrub Stratum</u> (Plot size <u>: 15 ft</u>				FACU speciesx 4 =UPL
1. Vaccinum corymbosum	60	Y	_ F <u>ACW</u> 2	species x 5 =
			3	Column Totals: $140$ (A) $300$ (B)
			4	Prevalence Index = $B/A = 2.14$
			5	Hydrophytic Vegetation Indicators:
			6	1 - Rapid Test for Hydrophilic Vegetation
			7	X 2-Dominance Testis >50%
				X 2 Dravalance Index in fi2 0
8.				A 3-Prevalence index is its.0
	60	= Total	Cover	Problematic Hydrophilic Vegetation' Explain)
EQ9/ aftetal acuery	200/ -			
	20%C	or lotar cov	/er:	Indicators of hydric soil and wetland hydrology must be
<u>Herb Stratum</u> (Plot size: <u>5 π</u> )				present, unless disturbed or problematic.
1. <u>Phragmites australis</u>	60	Y	<u>FACW</u> 2.	Definitions of Four Vegetation Strata:
			3.	Tree — Woody plants, excluding vines, 3 in (7.6 cm) or
				more in diameter at breast height (DBH), regardless of
<u>/</u>				height.
				Carling/Ohmuh Maadu planta suchudian vinas laas
5				than 3 in DBH and greater than 3 28 ft (1 m) tall
6	<u> </u>			
7				Herb — All herbaceous (non-woody) plants, regardless of
8				size, and woody plants less than 3.28 ft tall.
9.				Woody vine All woody vines greater than 3.28 ft in
10				height.
11				
12				
	60	_= Total	Cover	
50% oftotal cover:	20% c	of total cov	/er:	
Woody Vine Stratum (Plot size: <u>30 ft</u>				
1 Smilax rotundifolia	20	V	EAC 2	
	20		I <u>AO</u> 2	
			3	
				Hydrophytic
4				Vegetation
5				Present? YesNo
	20	= Total	Cover	
50% oftotal cover:	20%	ftotal.cov	or'	
Remarks: (If observed, list morphological adaptations	below).			
	,			

Profile Description: (Describe to the depth needed to document the indicator or confirm	the absence of indicators.)
Depth <u>Matrix Redox Features</u>	Covturo Domorko
$0^{(110105)}$ Color (110151) % Color (110151) % Type Loc 1 0''-3'' 2/1 10YR 100	organic loam
<u>3-20 0/1101K 100</u>	sand with organic steaking
· · · · · · · · · · · · · · · · _ · · _ = · _ · _	
Type: C=Concentration. D=Depletion. RM=Reduced Matrix. MS=Masked Sand Grains.	Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils':
Histosol (A1) Polyvalue Below Surface (58) (LRR S, T, U	l) 1 cm Muck (A9) (LRR 0)
Histic Epipedon (A2)Thin Dark Surface (59) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3) Loamy Mucky Mineral (F1) (LRR0)	Reduced Vertic (F18) (outside MLRA 1SOA, B)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Lavers (A5) X Depleted Matrix (F3)	Pleamont Floodplain Solis (F19) (LRR P, S, T)
Organic Bodies (A6) (LRR P. T. U) Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7)	Red Parent Material (TF2)
Muck Presence (A8) (LRR U) Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T) Mart (F10) (LRR U)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (M LRA151) Thick Dark Surface (A12) Iron Manganese Masses (E12) (I BB 0, B	T) Indicators of hydrophilic vegetation and
Coast Prairie Redox (A16) (MLRA1SOA) Umbric Surface (F13) (LRR P. T. U)	wetland hydrology must be present.
Sandy Mucky Mineral (S1) (LRR 0, S) Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (54) Reduced Vertic (F18) (MLRA 1SOA, 150	0B)
Sandy Redox (55) Piedmont Floodplain Soils (F19) (M LRA	A 149A)
Stripped Matrix (56) Anomalous Bright Loamy Soils (F20) (MLR/	A 149A, 153C, 153D)
Restrictive Laver (if observed):	
Depth (inches):	Hydric Soil Present? Yes X No
Remarks:	,

Project/Site, Island Beach State Park	Citv/County.	<u>Seaside</u>	Park,	Ocean	Sampling	Date!	04/06/2022
Applican//Owner: Orsted Ocean Wind, LLC	0		State:	NJ	Sampling	Point:	WI F-UPI
Investigator(s) Steve Seymour James Eberhardt	Section Tow	nshin Panga	Seasid	lo Park	Sampling	r ont.	
Londform (billolong torrage ata)				. level		Slope	(0()) 0
	LOCALTELLEL (C		ex. none). 7/	088271			
Subregion (LRR or MLRA). <u>LRR I</u> Lat!	39.049003	Long	:	.00027		Datu	m: <u> </u>
Soil Map Unit Name. HOOKSAN TINE SAND, 2-10% SIO	<u> </u>		N	WI classifi	cation. <u>non</u>	<u>e</u> Are	climatio
hydrologic conditions on the site typical for this time of year?	Yes <u>X</u> No	(If no	, explain	in Remark	s.)	.,	
Are VegetationSoilor Hydrologysign	nificantly disturbed?	Are "No	rmal Circu	umstances	" present? א	/es <u>X</u>	No
Are Vegetation, Soil, or Hydrologynate	urally problematic?	(If neede	ed. explain	any answ	ers in Remar	ks.)	
SUMMARY OF FINDINGS — Attach site map sh	owing sampling	point locati	ons, tra	nsects, i	mportant	feature	es, etc.
Hydrophytic Vegetation Present? Veg Na X	Hydric						
Soil Present? Yes No	X Is the	e Sampled Are	ea		V		
Wetland Hydrology Present? YesNo_	<u>vithi</u>	n a Wetland?		Yes	NO <u>_X</u>		-
Remarks!							
			0				to a secondar and
Wetland Hydrology Indicators:			Seco	ondary Ind	icators Imini	mum of i	two required}
Primary Indicators fmininiuc of one is required: check all tha				Surface Sp	oit Cracks (B	6)	Curferer (DO)
High Water Table (A2)				Sparsely vegetated Concave Surface (B8)			
Saturation (A3) Hydrogen	Sulfide Odor (C1)			Moss Trim	Lines (B16)	)	
Water Marks (B1) Oxidized F	Rhizospheres along L	ivina Roots (C	3)	Drv—Seas	on Water Tab	ole(C2)	
Sediment Deposits (B2) Presence	of Reduced Iron tC4)		-)	Crayfish B	urrows (CB)	)	
Drift Deposits (B3) Recent Iro	n Reduction in Tilled	Soils (C6)	:	Saturation	Visible an Ae	erial Imag	gery (Cg)
Algal Mat or Crust (B4) Thin Much	(Surface (C7)			Geomorph	ic Position (	(D2)	
Iron Deposits (B5) Other (Ex	plain in Remarks)		:	Shallow Ac	uitard (D3)		
Inundation Visible on Aerial Imagery (B7)			l	FAC-neutra	al Test (D5)		
Water-Stained Leaves (B9)				Sphag num	n moss (D8) (	LRR 7,	U)
Field Observations:	(in the set)						
Surface Water Present? Yes No C Depth	(inches):						
Seturation Present? Yes No X Depth	(inches).		nd Uvdra		ont? Voo		
(includes capillary fringe)		vvella		logy Fies	ent? res_		
Describe Recorded Data tstream gauge. monitoring well, a	erial photos, previou	s inspections)	, if availal	ble.			
Remarks:							
Nonano.							
very heavy rainfall (~1") in prior 24 hou	rs						

### VEGETATION (Four Strata) —Use scientific names of plants.

) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	Absolu	ite Domina	ant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>50 II</u>	<u>% Cov</u>	<u>ver</u> Speci	es+ <u>Status</u>	Number of Dominant Species
1. Ilex opaca	30	<u>Y</u>	F <u>ACU</u> 2.	That Are OBL, FACW, or FAC: 0 (A)
			3	Total Number of Dominant
			4.	Species Across All Strata: 5 (B)
			5.	
				Percent of Dominant Species ()
				- Inat Are OBL, FACW, or FAC:(A/B)
7	_			Pre valenc e Index worksheet:
1				Total % Cover of Multiply by
8			·	
	30	_= Total (	Cover	
50% oftotal cover:	20%	of total cov	/er:	FAC vv species x 2 =
<u>Saplin q/Shrub Stratum</u> (Plot size: <u>15 ft</u>				FAC species $x^3 = $
1. Prunus maritima	10	Y	UPL	FACU species $40$ x 4 = $160$
2. Yucca glauca	10	Y	UPL	UPL species $45$ x 5 = $225$
3 Hudsonia tomentosa	25	Y	UPL	Column Totals: <u>85 (</u> A) <u>385 (</u> B)
1				<u> </u>
4				Prevalence Index = $B/A = 4.00$
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophilic Vegetation
7				2 - Dominance Test is>50%
8				3 - Prevalence Index is fi3 0'
	45	= Total	Cover	Droblemetic Hydrophilic Vegetation' Evaluin)
50% of total cover:	20%	of total cov	/er:	
Herb Stratum (Plot size: 5 ft )				1
1 Taraxacum officinale	10	V	FACU	Indicators of hydric soil and wetland hydrology must
	_10	_ '	1 <u>ACO</u>	be present, unless disturbed of problematic.
2				Definitions of Four Vegetation Strata:
3				Tree — Woody plants, excluding vines, 3 in. (7.6 cm) or
4				more in diameter at breast height (DBH), regardless of
5				height.
6				Sapling/Shrub — Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
	_			Harb All barbagague (non weady) planta regardiage
8				of size and woody plants less than 3 28 ft tall
9				
10.				Woody vine — All woody vines greater than 3.28 ft in
11				neight.
12				
12.				4
			Cover	
50% of total cover:	20%	of total cov	/er:	4
Woody Vine Stratum (Plot size: 30 IL				
1				
2				
3.				
4				
5				Hydrophytic
5		- Tatal		Procept2 Vec No X
			Cover	
50% of total cover: Remarks: (If observed, list morphological adaptations	20%	of total cov	/er:	
substrate in vicinity is 60% bare/u	nvegeta	ted sand	b	

(inches)	<u>Color (moist)</u>	% Colo	r (moist)	% Type'	Loc	Texture		Remar	ks
0"-20"	<u>6/2 10YR</u>	100					dry sanc		
					_				
	·								
	·								
'Type: C=Co	oncentration, D=De	epletion, RM=Red	duced Matrix, M	S=Masked Sand G	Frains.	'Location:	PL=Pore L	ining, M=	Matrix.
Hydric Soil	Indicators: (Appli	cable to all LRR	s, unless other	wise noted.)		Indicators 1	for Problen	natic Hydi	ic Soils':
Histosol	l (A1)		Polyvalue B	elow Surface (58)	(LRR S, T, I	U) 1 cm M	/luck (A9) (	LRR 0)	
Histic E	pipedon (A2)		Thin Dark S	urface (59) (LRR	S, T, U)	2 cm N	/luck (A10)	(LRR S)	
Black H	istic (A3)		Loamy Muc	ky Mineral (F1) (L	RR0)	Reduce	ed Vertic (F	18) (outsid	eMLRA1SOA,B)
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix (F2)		Piedmo	ont Floodpla	ain Soils (I	F19) (LRR P, S, T)
Stratifie	d Layers (A5)		Depleted Ma	atrix (F3) Surface (F6)		Anoma	alous Brign	t Loamy s	Solis(F20)
5 cm Mi	cky Mineral (A7)		Depleted Dark	Surface (F0)		(IVI LF Red P:	∖A ISSD) arent Mate	rial (TF2)	
Muck Pr	resence (A8) (I RR	(LI(((), 1, 0)) (U)	Redox Depr	essions (F8)		Verv S	hallow Dar	k Surface	(TF12)
1 cm Mu	uck (A9) (LRR P, 1	Г)	Mart(F10)(	LRRU)		Other (I	Explain in R	emarks)	()
Deplete	d Below Dark Surf	ace (A11)	Depleted O	chric (F11) (M LF	RA151)	,	·	,	
Thick D	ark Surface (A12)		Iron-Manga	nese Masses (F12	2) (LRR 0, P	P, T) 'Indica	ators of hyd	rophilic ve	egetation and
Coast P	rairie Redox (A16)	(MLRA1SOA)	Umbric Surf	ace (F13) (LRR P,	T, U)	wet	land hydro	logy must	be present,
Sandy	Mucky Mineral (S1	1)(LRR 0, S)	Delta Ochric	(F17) (MLRA 151	)	unle	ess disturbe	ed or prob	lematic.
Sandy C	Beyed Matrix (54)		Reduced V	ertic (F18) (MLR/	A 150A, 15 10) (M I D	DUB)			
Strinner	d Matrix (56)		Anomalous	Bright Loamy Soils	(F20) (MI F	RA 149A)	153D)		
Dark Si	urface (57) (I RR	P. S. T. U)	Anomalous	Bright Loanty Cone	(1 20) (MEI	1000,	1000)		
Restrictive	Laver (if observe	d): papa abaa	mund						
Type:	, (	<sup>7</sup> none obse	lved						
Depth (inc	ches):					Hydric Soil	Present?	Yes	<u>No X</u>
Remarks:	,								

|--|

Project/Site. Island Beach State Park	City/County.	Seaside Park	. Ocean	_Sampling D	ate! 04	/06/2022
ApplicanVOwner: <u>Orsted Ocean Wind, LLC</u> Investigator(s)! <u>Steve Seymour, James Eberhardt</u>	Section, Tow	Stanship, Range:Sta	<sub>ate:</sub> <u>NJ</u> aside Park	Sampling	Point:	WLG-WL
Landform (hillslope, terrace, etc.).	_Local relief (c	oncave, convex.nc	one): <u>level</u>		Slope	(%): <u>0</u>
Subregion (LRR or MLRA). LRR T Lat!	9.848161	Long: <u>-7</u>	4.088441		_Datum:	<u>WGS84</u>
Soil Map Unit Name. Hooksan fine sand, 2-10% slope			—NWI classifi	cation <u>none</u>	Are	climatic
hydrologic conditions on the site typical for this time of year? Yes	<u>X</u> No	(If	no, explain in	Remarks.)		
Are VegetationSoilor Hydrologysignificar	ntly disturbed?	Are "Normal C	Circumstances	present? Ye	es	_No <u>X</u>
Are Vegetation, Soil, or Hydrologynaturally	problematic?	(If needed. ex	plain any ans،	wers in Rema	rks.)	
SUMMARY OF FINDINGS — Attach site map showir	ng sampling	point locations,	transects, i	mportant f	eatures	, etc.
Hydrophytic Vegetation Present?       Yes X Na         Hydric Soil Present?       Yes X No         Wetland Hydrology Present?       Yes X No         Remarks!       Yes X No	Is the within	e Sampled Area n a Wetland?	Yes	XNO		
Wetland hydrology significantly affected by paved parking lot into the northeast. Flown	y runoff from bath from pa	n paved roadwa rking lot into w	ay to west a vetland pres	and large sent		
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Ind	icators I minin	num of two	o required}
Primary Indicators fmininluic of one is required: check all that app	ly)		Surface Sp	oit Cracks (B6	5)	
Surface Water (A1) Aqua(ie Fauna	(B13)		Sparsely \	/egetated Co	ncave Su	Irface (B8)
High Water Table (A2) Mart Deposits (	B15) (LRR U)		Drainage F	atterns (B10)		
Saturation (A3) Hydrogen Sulfid	e Odor (C1)	iving Deete (C2)	Moss Trim	Lines (B16)	- (00)	
A Water Marks (B1) Oxidized Rhizo	spheres along L	iving Roots (C3)	Dry—Seas	on water I abl	e(C2)	
Drift Deposits (B2) Presence of Re	duction in Tilled		Crayiish B	Uffows (CB) Visible on Acr	ial Imagor	
Algal Mat or Crust (B4) Thin Muck Surf		30lis (C0)	Geomorph	visible all Ael	ומו וווומשפו רצו	y (Cg)
Iron Denosits (B5) Other (Evplain)	in Remarks)		Shallow Ac	uitard (D3)	52)	
Inundation Visible on Aerial Imageny (B7)	in tenarts)		EAC-neutra	al Test (D5)		
Water-Stained Leaves (B9)			Sphag nun	n moss (D8) (L	.RR 7. U)	
Field Observations:			-1			
Surface Water Present? Yes_ No_X_ Depth (inches): _						
Water Table Present? Yes X No Depth (inches	s): <u>16"</u> Satur	ation				
Present? Yes X No Depth (inche	es): <u>12"</u> (incl	udes Wetland Hy	ydrology Pres	ent? Yes 💆	<u>Х</u> No	
Describe Recorded Data tstream gauge. monitoring well, aerial	photos, previou	s inspections), if av	ailable.			
Remarks:						
very heavy rainfall (~1") in prior 24 hours						

# Sampling Point:<u>WLG-WL</u>

### VEGETATION (Four Strata) —Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>	Absolute <u>%</u> Cove	Dominar er <u>Specie</u>	nt Indicator s+ <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL_EACW_or EAC: 4 (A)
2				Total Number of Dominant
4				
5				Percent of Dominant Species 100 That Are OBL, FACW, or FAC: (A/B)
7				Pre valenc e index worksneet:
8				OPL species 5 v 1 - 5
	0	= Total C	over	FACW species $90 \times 2 = 180$
50% oftotal cover:	20% of	ftotal cove	er:	FAC species $10 \times 3 = 30$
Saplin q/Shrub Stratum (Plot size: 15 ft	_			FACUspecies v4-
1. <u>Rosa palustris</u>	<u>5 Y OE</u>	<u>3L</u>		
2. Vaccinium corymbosum	<u>10 Y F</u>	<u>ACW</u>		Column Totals: $115$ (A) $215$ (B)
3				$\frac{110}{(A)} = \frac{210}{(B)}$
4			<u> </u>	Prevalence Index = B/A = <u>1.87</u>
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophilic Vegetation
7				X 2-Dominance Test is >50%
8			<u> </u>	X 3-Prevalence Index is fi3.0'
	15	= Total C	over	Problematic Hydrophilic Vegetation' Explain)
50% of total cover:	20% of	f total cove	er:	
<u>Herb Stratum</u> (Plot size <u>: 5 ft</u> )				Indicators of hydric soil and wetland hydrology must
1. Phragmites australis	90	Y	F <u>ACW</u> 2	be present, unless disturbed or problematic.
			3	Definitions of Four Vegetation Strata:
			4	Tree — Woody plants, excluding vines, 3 in. (7.6 cm) or
			5	more in diameter at breast height (DBH), regardless of
				neight.
6				Sapling/Shrub — Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tail.
8				of size, and woody plants less than 3.28 ft tall.
9				Woody vine — All woody vines greater than 3.28 ft in
11.				neight.
12.	·			
	90	= Total C	over	
50% oftotal cover:	20% of	f total cove	er:	
Woody Vine Stratum (Plot size: 30				
1. Smilax rotundifolia	10	Y	FAC 2.	
			3.	
			4.	
			5.	
				Hydrophytic Vegetation
	<u>    10</u> =	Total Co	ver	Present? Yes X No
50% of total cover:	20% of	f total cove	er:	
Remarks: (If observed, list morphological adaptations	s below).			

Profile Description: (Describe to the depth	needed to document the indicator or confirm	the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) % Co	olor (moist) % Type' Loc	Texture Remarks
<u>0-1" 3/1 10YR 100</u>		fine sand shallow organic loam
1"-20" 6/1 10YR 100		sand with organic streaking
		· ·
		·
		·
'Type: C=Concentration, D=Depletion, RM=F	educed Matrix, MS=Masked Sand Grains.	'Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LF	RRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils':
Histosol (A1)	Polyvalue Below Surface (58) (LRR S, T, L	J) 1 cm Muck (A9) (LRR 0)
Histic Epipedon (A2)	Thin Dark Surface (59) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR0)	Reduced Vertic (F18) (outside MLRA 1SOA, B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (Ab) (LRR P, I, U)	Redox Dark Surface (F6)	(MLKA 153B) Bod Derent Meterial (TE2)
5 cm Mucky Mineral (A7) (LRR P, 1, 0)	Depieted Dark Surface (F7)	Red Parent Material (TF2)
1  cm Muck (AQ) (LRR U)	Mart (E10) (LPP II)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Ochric (F11) (M I RA151)	Other (Explain in Remarks)
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (I RR 0, P	T) Indicators of hydrophilic vegetation and
Coast Prairie Redox (A16) (MLRA1SOA)	Umbric Surface (F13) (LRR P. T. U)	wetland hydrology must be present.
Sandy Mucky Mineral (S1) (LRR 0, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (54)	Reduced Vertic (F18) (MLRA 1SOA, 15	50B)
Sandy Redox (55)	Piedmont Floodplain Soils (F19) (M LR	A 149A)
Stripped Matrix (56)	Anomalous Bright Loamy Soils (F20) (MLR	RA 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U)	Anomalous Bright Loamy Soils (F20) (MLR	RA 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed):	Anomalous Bright Loamy Soils (F20) (MLR	RA 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	RA 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:none c Depth (inches):	Anomalous Bright Loamy Soils (F20) (MLR bserved	A 149A, 153C, 153D) Hydric Soil Present? Yes <u>X</u> No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR bserved	RA 149A, 153C, 153D) Hydric Soil Present? Yes <u>X</u> No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (Ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR bserved	RA 149A, 153C, 153D) Hydric Soil Present? Yes <u>X</u> No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:none c Depth (inches): Remarks:	Anomalous Bright Loamy Soils (F20) (MLR bserved	RA 149A, 153C, 153D) Hydric Soil Present? Yes <u>X</u> No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type: none c Depth (inches): Remarks:	Anomalous Bright Loamy Soils (F20) (MLR bserved	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type: none c Depth (inches): Remarks:	Anomalous Bright Loamy Soils (F20) (MLR bserved	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (If observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (If observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes XNo
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D) Hydric Soil Present? Yes <u>X</u> No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR 	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (Ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes XNo
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	A 149A, 153C, 153D)
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No
Stripped Matrix (56) Dark Surface (57) (LRR P, S, T, U) Restrictive Layer (ir observed): Type:	Anomalous Bright Loamy Soils (F20) (MLR	Hydric Soil Present? Yes X_No

Joland Daash State Dark					<i>.</i>	4/00/0000
Project/Site. ISland Beach State Park	City/C	ounty. <u>Seaside</u>	Park, Ocea	<u>1</u> Sampling	Date!	4/06/2022
ApplicanVOwner: Orsted OceanWind, LL	.C		State:NJ	Sampling	Point:	<u>WLG-UPL</u>
Investigator(s)! Steve Seymour, James Eb	erhardtSectio	n, Township, Range	<u>: Seaside Park</u>			
Landform (hillslope, terrace, etc.). level	Local	relief (concave, conv	vex. none): <u>level</u>		_Slope	(%) <u>:</u> 0
Subregion (LRR or MLRA), LRR T	Lat! 39.8482	246 Long	-74.0883	45	Datum:	WGS84
Soil Map Unit Name. Hooksan fine sand, 2	-10% slope		NWI class	ification. <u>no</u>	one	
Are climatic hydrologic conditions on the site typ	ical for this time of year?	Yes X No	(If no explain	n Remarks)		
Are Vegetation Soil or Hydrology	significantly distu	rbed? Are "No	(II fic, explain	es" present? \	/os X	hlm
						1982
Are Vegetation, Soil, or Hydrology_	naturally problema	atic? (If neede	ed. explain any ans	wers in Remar	'KS.)	
SUMMARY OF FINDINGS — Attach sit	e map showing sam	pling point locati	ons, transects	, important	features	, etc.
Hydrophytic Vegetation Present?       Yes_         Soil Present?       Yes_         Wetland Hydrology Present?       Yes_         Remarks!       Yes_	Na <u>X</u> Hydric NoX No_X	Is the Sampled Ar within a Wetland?	ea Yes	<u>NO_X</u>		
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Ir	ndicators I mini	mum of tw	o required}
Primary Indicators fmininluic of one is required: of	Surface	Spit Cracks (B	6)			
Surface Water (A1)	Aqua(ie Fauna (B13)		Sparsely	Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)	Mart Deposits (B15) (LR	R U)	Drainage	Drainage Patterns (B10)		
Saturation (A3)	Hydrogen Sulfide Odor (	C1)	Moss Tri	Moss Trim Lines (B16)		
Water Marks (B1)	Oxidized Rhizospheres	along Living Roots (C	C3) Dry—Se	Dry—Season Water Table (C2)		
Sediment Deposits (B2)	Presence of Reduced Iron tC4)			Crayfish Burrows (CB)		

Recent Iron Reduction in Tilled Soils (C6)

Thin Muck Surface (C7)

Yes\_No\_X Depth (inches):

Describe Recorded Data tstream gauge. monitoring well, aerial photos, previous inspections), if available.

Yes No X Depth (inches):

Yes No\_X Depth (inches):

Other (Explain in Remarks)

Saturation Visible an Aerial Imagery (Cg)

Geomorphic Position (D2)

Sphag num moss (D8) (LRR 7, U)

Shallow Aquitard (D3)

FAC-neutral Test (D5)

Wetland Hydrology Present? Yes\_\_\_\_\_No\_X

Remarks:

Drift Deposits (B3)

Iron Deposits (B5)

Field Observations:

Surface Water Present?

Water Table Present?

Saturation Present? (includes capillary fringe)

Algal Mat or Crust (B4)

Water-Stained Leaves (B9)

Inundation Visible on Aerial Imagery (B7)

very heavy rainfall (~1") in prior 24 hours

## VEGETATION (Four Strata) —Use scientific names of plants.

## Sampling Point: WLG-UPL

Tree Stratum (Plat size) 30 ft	Absolu	te Domir	hant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>50 n</u> )	<u>% Cov</u>	ver Spec		Number of Dominant Species
1. Juniperus virginiana	60	<u>Y</u>	FACU	That Are OBL, FACW, or FAC: I (A)
2	<u> </u>			Total Number of Dominant
3				Species AcrossAll Strata:(B)
4				Percent of Dominant Species 25
5				That Are OBL, FACW, or FAC:(A/B)
7				Pre valenc e Index worksheet:
8				Total % Cover of Multiply by
	60	= Tota	l Cover	OBL speciesx 1=
50% oftotal cover:	20%	of total co	over:	FACW species <u>20</u> x 2 = <u>40</u>
Saplin d/Shrub Stratum (Plot size: 15 ft				FAC species x 3 =
1. Vaccinium corvmbosum	20 Y	FACW		FACU species $60 \times 4 = 240$
2 Myrica pennsylvania	30	Y	UPL 3	UPL species
			<u>0;</u> 0.	Column Totals: <u>150 (</u> A) <u>630 (</u> B)
			4	
			5	Prevalence Index = B/A = <u>4.2</u>
			6	Hydrophytic Vegetation Indicators:
			7	<ul> <li>1 - Rapid Test for Hydrophilic Vegetation</li> </ul>
				X 2-Dominance Test is >50%
8				X 3-Prevalence Index is fi3.0'
	_50	_= Tota	l Cover	Problematic Hydrophilic Vegetation' Explain)
50% of total cover:	20%	of total co	over:	-
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				Indicators of hydric soil and wetland hydrology must
<ol> <li>Ammophila breviligulata</li> </ol>	<u>40 Y L</u>	JPL		be present, unless disturbed or problematic.
2				Definitions of Four Vegetation Strata:
3				
4.				I ree — Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH) regardless of
5.				height.
6				
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
				·······
8.				Herb — All herbaceous (non-woody) plants, regardless
9.				of size, and woody plants less than 5.26 it tall.
10				Woody vine — All woody vines greater than 3.28 ft in
10				height.
10				-
12	40			+
	40	_= Iota	Cover	
50% oftotal cover:	20%	of total co	over:	-
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>				
1				-
2				-
3				-
4				Hydrophytic
5				Vegetation
	0	= Tota	l Cover	Present? Yes No <u>X</u>
50% of total cover:	20%	of total co	over:	
Remarks: (If observed, list morphological adaptations	s below).			
40% of area is bare/unvegetated san	d			

## SOIL Sampling Point: WLG-UPL

Profile Description: (Describe to the depth ne	eeded to document the indicator or confirm the	absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) % Colo	<u>r (moist) % Type' Loc Texti</u>	ure Remarks
<u>    0"-20"     6/1 10YR     100                          </u>	sa	nd dry sand
'Type: C=Concentration, D=Depletion, RM=Rec	duced Matrix, MS=Masked Sand Grains.	Location: PL=Pore Lining, M=Matrix.
Histosol (A1)	Polyvalue Below Surface (58) (LRR S, I, U)	1 cm Muck (A9) (LRR 0)
Histic Epipedon (A2)	I nin Dark Surface (59) (LRRS, 1, U)	2 cm Muck (A10) (LRR S)
BIACK HISTIC (A3)	Loamy Mucky Mineral (F1) (LRR0)	Reduced Vertic (F18) (Outside MLRA ISOA, B)
Hydrogen Sunde (A4)	Deploted Matrix (F2)	Anomalous Bright Learny Soils (F19)
Crappio Redice (AG) (LRR D. T. LI)	Depieted Matrix (F3) Roday Dark Surface (F6)	(ML DA 152D)
5 am Mueley Mineral (AZ) (LRR P, T, U)	Redux Dark Surface (F0)	(MLRA 155D) Red Perent Meterial (TE2)
Musk Presence (A9) (LRR P, 1, U)	Depleted Dark Sunace (F7)	New Parenti Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
T CITINIUCK (A9) (LRR P, T)	Mail(FIU)(LRRU) Depleted Ophric (F11) (MI DA 151)	Other (Explain in Remarks)
Thick Dark Surface (A10)		Undiantena of huden chiling and the and Oceant
Inick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR U, P, T)	indicators of hydrophilic vegetation and Coast
Prairie Redox (A16) (MLRA 150A)	Umbric Surface $(F13)$ (LRR P, 1, U)	wetland hydrology must be present, Sandy
Mucky Mineral (S1) (LRR 0, S)	Delta Ochric (F17) (MLRA 151)	uniess disturbed of problematic.
Sandy Gleyed Matrix (54)	Reduced Vertic (F18) (MLRA 150A, 150B)	0.4.)
Sandy Redox (55)	Pleamont Floodplain Solis (F19) (MLRA 14)	
Stripped Matrix (56)	Anomaious Bright Loamy Soils (F20) (MLRA 14	9A, 153C, 153D) Dark
Surface (57) (LRR P, S, T, U)		
Tuno:	rved	
Type:		X
Depth (inches):		Hydric Soil Present? Yes No
Remarks:		
root zone throughout soil pr	ofile	