

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**

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Attachment B. Site Photographs

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# 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
	Lakehurst sand, 0 to 5		Lakehurst and similar soils	85%	No
LakB	percent slopes	41.1%	Minor components	15%	Yes/ No
PstAt	Psamments, 0 to 2		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-	4.4%	Appoquinimink, very frequently flooded, and similar soils	40%	Yes
Transquaking-Mispillion AptAv complex, 0 to 1 percent	Transquaking-Mispillion complex, 0 to 1 percent slopes, very frequently		Transquaking, very frequently flooded, and similar soils	30%	Yes
	flooded		Mispillion, very frequently flooded, and similar soils	25%	Yes
			Minor components	5%	No
AtsAO	Atsion sand, 0 to 2	1 10/	Atsion and similar soils	90%	Yes
AISAO	percent slopes, Northern 4.1% 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 meter 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

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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.



	able 3.2-1. Summary of Wetland Delineation Field Survey Results				
Wetland ID	Hydrology Indicators	Dominant Vegetation	Hydric Soil Indicator	Size (Acres)	Cowardin Classification
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	Species Scientific	State Status	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	Е	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	E	-
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.

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### 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.

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## **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



MAF	PLEGEND	MAP INFORMATION
Area of Interest (AOI)	Spoil Area	The soil surveys that comprise your AOI were mapped at 1:24,000.
Area of Interest (AOI)	) 👌 Stony Spot	1.24,000.
Soils Soil Map Unit Polygo		Please rely on the bar scale on each map sheet for map measurements.
Soil Map Unit Lines	🍿 Wet Spot	
Soil Map Unit Points	△ Other	Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
Special Point Features	Special Line Features	Coordinate System: Web Mercator (EPSG:3857)
(b) Blowout	Water Features	
Borrow Pit	Streams and Canals	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts
🖾 💥 Clay Spot	Transportation	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more
Closed Depression	nterstate Highways	accurate calculations of distance or area are required.
Gravel Pit	US Routes	This product is generated from the USDA-NRCS certified data as
Gravelly Spot	🧫 Major Roads	of the version date(s) listed below.
🔇 Landfill	Local Roads	Soil Survey Area: Ocean County, New Jersey
👗 Lava Flow	Background	Survey Area Data: Version 19, Aug 31, 2021
له Marsh or swamp	Aerial Photography	Soil map units are labeled (as space allows) for map scales
Mine or Quarry		1:50,000 or larger.
Miscellaneous Water		Date(s) aerial images were photographed: Apr 13, 2021—Sep
Perennial Water		14, 2021
V Rock Outcrop		The orthophoto or other base map on which the soil lines were
Saline Spot		compiled and digitized probably differs from the background
Sandy Spot		imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
Severely Eroded Spo	ot	
Sinkhole		
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 20aseb - 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

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## **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	ntic and Gulf Coastal Plain Reg	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,	
Subregion (LRR or MLRA): LRR T Lat:	Long:	
Soil Map Unit Name: Pstat, Psammquents, Sulfide substrati		NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this		No (If no, explain in Remarks.)
Are Vegetation, SoilX_, or Hydrologysign		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.
Hydric Soil 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		Surface Soil Cracks (B6)
	uuna (B13) sits (B15) <b>(LRR U)</b>	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
	Sulfide Odor (C1)	Moss Trim Lines (B16)
	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)
	Surface (C7)	Geomorphic Position (D2)
	olain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)		FAC-Neutral Test (D5) Sphagnum Moss (D8) <b>(LRR T, U)</b>
Field Observations:		
	epth (inches):	
	epth (inches):	
		Hydrology Present? Yes No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, as	rial photos, previous inspections), if a	vailable:
Remarks:		
Nonano.		

Sampling Point: WLA-OP-2-UP

		inant Indicator	
Tree Stratum (Plot size:)	% Cover Spe	cies? 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		Prevalence Index worksheet:
50% of total cover:	20% of tota	l 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 x 3 = 0
3			FACU species 2 x 4 = 8
4			UPL species 70 x 5 = 350
5			Column Totals: 87 (A) 373 (B)
6			Prevalence Index = B/A = 4.29
	=Total	Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of tota	l cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)			2 - Dominance Test is >50%
1			3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.			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.
	=Total	Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of tota	l cover:	<b>Tree</b> – 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 Y	es UPL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Puccinellia maritima	15 N	No OBL	Sapling – Woody plants, excluding woody vines,
3. Plantago arenaria		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.			<b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody
			plants, except woody vines, less than approximately 3
10			ft (1 m) in height.
			<b>Woody Vine</b> – All woody vines, regardless of height.
11			
50% of total cover: 4		l cover: 18	
	<u>4</u> 20% 01 1018		
Woody Vine Stratum (Plot size:)			
1			
2			
3.			
4.			
5			Hydrophytic
	=Total		Vegetation
50% of total cover:	20% of tota	l cover:	Present? Yes <u>No X</u>
Remarks: (If observed, list morphological adaptation	ns below.)		

Depth Inches) Co	Matrix		Red	onfirm the a								
,	olor (moist)	%	Color (moist)	ox Featur %	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re		Ren	narks	
0.0	· · ·			· <u> </u>			Sond		Sond	with pobb		quarta
0-8	10YR 5/6	75		·			Sand	<u>y</u>	Sanu	with pebb	les, some	quartz
8-16	10YR 5/6	75				<u> </u>	Sand	у	Sand with pebbles			
						·						
		<u> </u>										
		<u> </u>		· <u> </u>								
ype: C=Concent	ration, D=Depl	etion, RM=R	educed Matrix,	MS=Masl	ked San	d Grains.	<sup>2</sup> Lo	ocation: PL	_=Pore I	Lining, M=	Matrix.	
ydric Soil Indicat	ors: (Applica	ble to all LR	Rs, unless oth	erwise n	oted.)		Inc	dicators fo	r Probl	ematic Hy	/dric Soil	s <sup>3</sup> :
Histosol (A1)		_	Thin Dark S	Surface (S	9) <b>(LRR</b>	S, T, U)		1 cm Muc	ck (A9) (	(LRR O)		
Histic Epipedor	n (A2)	_	Barrier Islar	nds 1 cm	Muck (S	12)		2 cm Muc	ck (A10)	(LRR S)		
Black Histic (A3	3)		(MLRA 1	53B, 153	D)			Coast Pra	airie Re	dox (A16)		
Hydrogen Sulfie	de (A4)	_	Loamy Muc	ky Minera	al (F1) <b>(L</b>	.RR O)		(outsid	e MLR/	A 150A)		
Stratified Layer	s (A5)		Loamy Gley	ed Matrix	(F2)			Reduced	Vertic (	F18)		
Organic Bodies	atrix (F3)				outsid	e MLR	<mark>4 150A</mark> , 1	50B)				
5 cm Mucky Mi	neral (A7) <b>(LR</b>	Redox Dark	Surface	(F6)			Piedmont	t Floodp	lain Soils	(F19) <b>(LR</b>	R P, T	
Muck Presence	Depleted D	ark Surfa	ce (F7)			Anomalou	us Brigh	t Floodpla	ain Soils (I	=20)		
1 cm Muck (A9	) (LRR P, T)	-	Redox Dep	ressions (	(F8)			 (MLRA	153B)			
Depleted Below		e (A11)	 Marl (F10)	LRR U)	. ,			Red Pare	-	rial (F21)		
Thick Dark Sur		· · · –	Depleted O		1) (MLR	A 151)				rk Surface	(F22)	
Coast Prairie R		LRA 150A)	Iron-Manga			-	D. P. T)	-		A 138, 152		154)
Sandy Mucky N		-	Umbric Sur				, , ,	-		ow Chrom		-
Sandy Gleyed I		- , - , - ,	Delta Ochri			-		(MLRA				,
Sandy Redox (		-	Reduced V			-	50B)	-		Remarks	)	
Stripped Matrix		-	Piedmont F					_ 0 1101 (22		i tomanto,	/	
Dark Surface (S		т IN –	Anomalous				-					
Polyvalue Belo			(MLRA 1	-			0)	<sup>3</sup> Indicator	s of hyd	drophytic v	enetation	and
(LRR S, T, U		)	Very Shallo						•	logy must	-	
	)	-	(MLRA 1		`	,			-	ed or prob		п,
estrictive Layer (	if observed):											
Туре:												
Depth (inches):							Hydric S	oil Present	t?	Yes	No	Х
Deptil (menes).												
emarks: 8 10YR 3/3 25%,												

WETLAND DETERMIN See ERDC/E	ATION DATA	SHEET – A			•	Requirement	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			_ `	·		Sampling Point: WLA-OP-1-W
Investigator(s): DB, DV, SK			Se	ection. Towns	ship, Range: Oc	cean Twp, Ocean Co	
Landform (hillside, terrace, e						ne):	
Subregion (LRR or MLRA):		Lat:			Long:		Olepe (76) 0 2
Soil Map Unit Name: PSTA					Long.	NWI classificat	
· · · · · · · · · · · · · · · · · · ·				2	Vee V		xplain in Remarks.)
Are climatic / hydrologic con			-				,
Are Vegetation, Soil							Yes <u>X</u> No
Are Vegetation, Soil						n any answers in Re	
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		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		ired; check a	II that apply)			Surface Soil Crack	
Surface Water (A1)		Aquati	c Fauna (B13)			Sparsely Vegetate	d Concave Surface (B8)
x High Water Table (A2)			eposits (B15) (L	-		Drainage Patterns	
x Saturation (A3)			gen Sulfide Odo			_Moss Trim Lines (I	
Water Marks (B1) Sediment Deposits (B2	)		ed Rhizospheres	-	DOTS (C3)	Dry-Season Water Crayfish Burrows (	
Drift Deposits (B3)	)		t Iron Reduction	. ,	s (C6)		on Aerial Imagery (C9)
Algal Mat or Crust (B4)			luck Surface (C		. ,	- Geomorphic Positi	•••
Iron Deposits (B5)		Other	(Explain in Rem	arks)		Shallow Aquitard (	D3)
Inundation Visible on A	•••	7)			<u></u> X	FAC-Neutral Test	. ,
Water-Stained Leaves	(B9)					_Sphagnum Moss (	D8) <b>(LRR T, U)</b>
Field Observations:							
Surface Water Present? Water Table Present?	Yes	No	Depth (inches Depth (inches	,			
Saturation Present?	Yes <u>x</u> Yes x	No No	Depth (inches		Wetland Hvo	Irology 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

Tree Stratum (Plot size: )	Absolute Dominant % Cover Species?	Indicator Status	Dominance Test worksheet:
1.			
2.			Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
3			Total Number of Dominant Species Across All Strata: 3 (B)
5.			、
6.			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (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 0 x 1 = 0
1			FACW species 110 x 2 = 220
2			FAC species 20 x 3 = 60
3			FACU species 0 x 4 = 0
4			UPL species 0 x 5 = 0
5			Column Totals: 130 (A) 280 (B)
6			Prevalence Index = B/A = 2.15
	=Total Cover		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 Yes	FAC	X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Solidago sempervirens	20 Yes	FACW	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.
	40 =Total Cover		Definitions of Five Vegetation Strata:
50% of total cover: 2	0 20% of total cover:	8	<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 5 )			approximately 20 ft (6 m) or more in height and 3 in.
1. Spartina patens	90 Yes	FACW	(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,
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 ft (1 m) in height.
10			
11			<b>Woody Vine</b> – All woody vines, regardless of height.
	90 =Total Cover		
50% of total cover: 4	5 20% of total cover:	18	
Woody Vine Stratum (Plot size:)			
1			
2.			
3.			
4.			
4 5.			
	=Total Cover		Hydrophytic Vogotation
	=Total Cover 20% of total cover:		Hydrophytic Vegetation Present? Yes <u>X</u> No
5.	20% of total cover:		Vegetation

Depth	Matrix		Rede	ox Featur	es								
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text	ure	Remarks				
0-7	10YR 3/2	60	10YR 5/3	35			San	andy Fine sand					
			10YR 3/6	5					Sand, little clay				
7-16	10YR 4/3	100					San	dy	Sand, little clay, some pebbles				
16-24	10YR 4/3	80	10YR 7/2	20			San	dy	Sandy clay				
				·	_								
71	oncentration, D=Dep	,	,			Grains.			PL=Pore Lining, M=Matrix.				
•	Indicators: (Applica				е т IN	Ir		or Problematic Hydric Soils <sup>3</sup> :					
Histosol (A1) Thin Dark Surface (S9) <b>(LRR S, T</b> Histic Epipedon (A2) Barrier Islands 1 cm Muck (S12)							_		uck (A9) <b>(LRR O)</b> uck (A10) <b>(LRR S)</b>				
Black His	53B, 153	``	12)	-		rairie Redox (A16)							
	n Sulfide (A4)	Loamy Muc						de MLRA 150A)					
_ ′ ँ	( )	Loamy Gley		· / ·	π Ο)		•	d Vertic (F18)					
Stratified Layers (A5) Organic Bodies (A6) <b>(LRR P, T, U)</b>			Depleted M		. ,		_		de MLRA 150A, 150B)				
	icky Mineral (A7) (LR		<u> </u>	. ,				•	nt Floodplain Soils (F19) <b>(LRR P, T</b>				
	esence (A8) (LRR U		Depleted Dark		· · /			Anomalous Bright Floodplain Soils (F20)					
	ick (A9) (LRR P, T)	,	Redox Dep		( )				A 153B)				
	Below Dark Surface	⊃ (A11)	Marl (F10)		(10)			Red Parent Material (F21)					
'	ark Surface (A12)	5 (711)	Depleted O	· ·	1) (MI RA	151)			allow Dark Surface (F22)				
	airie Redox (A16) (N	II RA 150	·		<i>,</i> ,	•	рт) —		de MLRA 138, 152A in FL, 154)				
	lucky Mineral (S1) <b>(L</b>		Umbric Sur			, <b>.</b>	, . , .,	•	slands Low Chroma Matrix (TS7)				
	leyed Matrix (S4)		Delta Ochri		, <b>、</b>			(MLRA 153B, 153D)					
X Sandy R			Reduced V	· /·			0B)	•	xplain in Remarks)				
	Matrix (S6)		Piedmont F	•	<i>,</i> ,		· -		, ,				
Dark Sur	face (S7) (LRR P, S	, T, U)	Anomalous				-						
Polyvalu	e Below Surface (S8	3)	(MLRA 1	49A, 153	C, 153D)			<sup>3</sup> Indicato	ors of hydrophytic vegetation and				
	S, T, U)		•	Very Shallow Dark Surface (F22)					wetland hydrology must be present,				
			(MLRA 1	38, 152A	in FL, 15	54)		unles	s disturbed or problematic.				
Restrictive L	_ayer (if observed):												
Type:													
Depth (inches):							Hydric	Soil Preser	nt? Yes X No				

WETLAND DETERMINA See ERDC/EI	ATION DATA	SHEET - /			-	Requirement Co	710-0024, Exp: 11/30/2024 ontrol Symbol EXEMPT: 335-15, paragraph 5-2a)
Project/Site: Ocean Wind				City/County	: Ocean	S	Sampling Date: 5/5/2022
Applicant/Owner: Orsted	4						Sampling Point: WLB-OP2-UF
Investigator(s): DB, DV, SK			S	ection Townsh	ip, Range: Oce		
Landform (hillside, terrace, e							Slope (%): 0-5
						e):	
Subregion (LRR or MLRA):					Long:		Datum:
Soil Map Unit Name: Lakeh						NWI classification	
Are climatic / hydrologic cond			-		′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		inadi ala ali			Sec		inimum of two required)
Primary Indicators (minimur Surface Water (A1)	n or one is requ		tic Fauna (B13)			Surface Soil Cracks	Concave Surface (B8)
High Water Table (A2)			Deposits (B15) <b>(L</b>	RR U)		Drainage Patterns (E	
Saturation (A3)			ogen Sulfide Odo			Moss Trim Lines (B1	
Water Marks (B1)			zed Rhizosphere		ots (C3)	Dry-Season Water T	
Sediment Deposits (B2	)	Prese	ence of Reduced	Iron (C4)		Crayfish Burrows (C	8)
Drift Deposits (B3)			nt Iron Reduction		(C6)	Saturation Visible or	n Aerial Imagery (C9)
Algal Mat or Crust (B4)			Muck Surface (C			Geomorphic Position	
Iron Deposits (B5)			(Explain in Rem	narks)		Shallow Aquitard (D	
Inundation Visible on A	0,1	57)				FAC-Neutral Test (D	,
Water-Stained Leaves	(pa)					Sphagnum Moss (D	0) <b>(LRR 1, U)</b>
Field Observations: Surface Water Present?	Voc	No Y	Dopth (inchos	-)·			
Water Table Present?	Yes Yes	No <u>X</u> No X	Depth (inches Depth (inches				
Saturation Present?	Yes	No X	Depth (inches		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:	
Remarks:							
Remarks.							

Sampling Point: WLB-OP2-UP

Tree Stratum (Plot size: 30 )	Absolute Dominant % Cover Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus rigida</u> 2.	40 Yes	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: <u>33.3%</u> (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 50 x 4 = 200
4			UPL species $0 \times 5 = 0$
5			Column Totals: 80 (A) 290 (B)
6			Prevalence Index = B/A = <u>3.63</u>
	=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 <sup>1</sup>
2			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.
	30 =Total Cover	0	Definitions of Five Vegetation Strata:
50% of total cover: 15	20% of total cover:	6	<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).
1 2.			
3.			<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.
+			Shrub - 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.			Li drank, dia
	10 =Total Cover		Hydrophytic Vegetation
50% of total cover: 5	20% of total cover:	2	Present? Yes No X
Remarks: (If observed, list morphological adaptation	s below.)		

Profile Desc	cription: (Describe f	to the dept	h needed to doc	ument th	ne indica	tor or co	nfirm the	e absence	of indic	cators.)		
Depth	Matrix			x Feature	4							
inches)	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>	Tex	ture		Re	marks	
0-3	7.5YR 3/3	100					Pe	eat		Organ	ic material	
3-22	7.5YR 4/6	100					Sa	ndy		Fine sand	l with pebbles	
	oncentration, D=Depl					Grains.				e Lining, M		
•	Indicators: (Applica	ble to all L					I				lydric Soils <sup>3</sup> :	
Histosol	( )		Thin Dark S		-	1 cm Muck (A9) <b>(LRR O)</b> 2 cm Muck (A10) <b>(LRR S)</b>						
	pipedon (A2)	Barrier Islan			12)	-			<i>,</i> , ,			
	stic (A3)	(MLRA 15				-			Redox (A16	)		
Hydrogen Sulfide (A4)			Loamy Muck		· / ·	RR 0)		•		.RA 150A)		
Stratified Layers (A5)			Loamy Gley		(F2)		-		ed Verti		500)	
	Bodies (A6) (LRR P,	• •	Depleted Ma	. ,	(50)			•		.RA 150A, 1		
	ucky Mineral (A7) (LR		Redox Dark		. ,		-			•	s (F19) <b>(LRR P</b>	
	esence (A8) (LRR U)		Depleted Da				-			-	lain Soils (F20)	
	ıck (A9) <b>(LRR P, T)</b>		Redox Depr	```	(F8)			•	RA 153E			
-	d Below Dark Surface	e (A11)	Marl (F10) (I				-			aterial (F21)		
	ark Surface (A12)		Depleted Oc	hric (F11	1) (MLRA	151)	-			Dark Surfac	. ,	
	rairie Redox (A16) ( <b>M</b>				``	<i>,</i> ,	, P, T)	•			62A in FL, 154)	
Sandy M	lucky Mineral (S1) <b>(L</b>	RR O, S)	Umbric Surfa	ace (F13	) (LRR P	, T, U)	-	Barrier	Islands	Low Chror	na Matrix (TS7)	
Sandy G	Bleyed Matrix (S4)		Delta Ochric	(F17) <b>(N</b>	ILRA 15	1)		(MLRA 153B, 153D)				
Sandy R	ledox (S5)		Reduced Ve	rtic (F18	) <b>(MLRA</b>	150A, 15	0B) _	Other	Explain	in Remark	s)	
Stripped	Matrix (S6)		Piedmont Fl	oodplain	Soils (F1	9) <b>(MLR</b> A	A 149A)					
Dark Su	rface (S7) (LRR P, S	, T, U)	Anomalous	Bright Flo	oodplain	Soils (F20	D)					
Polyvalu	e Below Surface (S8)	)	(MLRA 14	9A, 1530	C, 153D)			<sup>3</sup> Indica	tors of h	nydrophytic	vegetation and	
(LRR	S, T, U)		Very Shallov (MLRA 13		`	,				Irology mus Irbed or pro	t be present, blematic.	
Restrictive	Layer (if observed):											
Type:												
Depth (inches):							Hydric	Soil Pres	n+2	Yes	No X	

WETLAND DETERMINATION DATA SHEE	ps of Engineers T – Atlantic and Gulf Coastal Plain roponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
Project/Site: Ocean Wind	City/County: Oc	ean Township Sampling Date: 5/5/2022
Applicant/Owner: Orsted		State: NJ Sampling Point: WLB-OP1-WE
Investigator(s): DB, DV, SK	Section, Township, F	
Landform (hillside, terrace, etc.): Depressional		onvex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): LRR T		Long: Datum:
Soil Map Unit Name: PstAt; Psammquents, Sulfid		NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typic	· · ·	X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology		ormal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology		led, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling point	ocations, transects, important features, etc.
	X  No  Is the Sampled    X  No  within a Wetlar    X  No	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; c	heck all that apply)	Surface Soil Cracks (B6)
	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
	Marl Deposits (B15) <b>(LRR U)</b>	Drainage Patterns (B10)
	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
· · · ·	Oxidized Rhizospheres on Living Roots (	
	Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6	Crayfish Burrows (C8)
	Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		X FAC-Neutral Test (D5)
X Water-Stained Leaves (B9)		Sphagnum Moss (D8) (LRR T, U)
Field Observations:		
	X Depth (inches):	
Water Table Present? Yes X No	Depth (inches): 3	
	Depth (inches): 0	etland Hydrology Present? Yes X No
(includes capillary fringe)		) if everileble:
Describe Recorded Data (stream gauge, monitori	ng well, aenal photos, previous inspection	is), il avaliable.
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: (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 $0   x 5 = 0$
5.				Column Totals: 160 (A) 410 (B)
6.				$\frac{1}{2} = \frac{1}{2} = \frac{1}$
0.		=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%
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	<b>Tree</b> – 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	Yes	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Phragmites australis	30	Yes	FACW	Sepling Woody planta evaluding woody vince
3.		103	1700	<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.
4				Charte Weach Dianta avaluation was during
5.				<b>Shrub -</b> Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, <u>and</u> woody
9.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
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:		of total cover:		Present? Yes X No
Remarks: (If observed, list morphological adaptation	ns below.)			

Depth	Matrix			ox Featur	es							
inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	Texture Rema				
0-4	10YR 2/1	100					Loamy/Cl	ayey	Silty loam, some organic			
4-8	10YR 3/1	100					Loamy/Cl	ayey	Silt, some	e 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 r	edox concentrations		
		· ·										
71	oncentration, D=Dep	,	,			Grains.			=Pore Lining,			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.							Ind			: Hydric Soils <sup>3</sup> :		
Histosol (A1) Thin Dark Surface (S9) (LRR S, T, U								-	ck (A9) <b>(LRR (</b>	,		
Histic Epipedon (A2) Barrier Islands 1 cm Muck (S12)								-	k (A10) <b>(LRR</b>	•		
Black Histic (A3) (MLRA 153B, 153D)								-	airie Redox (A	,		
Hydrogen Sulfide (A4) Loamy Mucky Min						RR O)		•	e MLRA 150A	A)		
	Layers (A5)	Loamy Gley		. ,			-	Vertic (F18)				
Organic Bodies (A6) (LRR P, T, U) Depleted Matrix								•	e MLRA 150A			
	cky Mineral (A7) <b>(LF</b>			Redox Dark Surface (F6)					Piedmont Floodplain Soils (F19) (LRR P, T)			
	esence (A8) <b>(LRR U</b>	)	Depleted Da	ark Surfa	ce (F7)			Anomalo	us Bright Floor	dplain Soils (F20)		
1 cm Mu	ck (A9) <b>(LRR P, T)</b>		Redox Depr	essions	(F8)			(MLRA	153B)			
Depleted	Below Dark Surface	e (A11)	Marl (F10) <b>(</b>	LRR U)			Red Parent Material (F21)					
Thick Da	ark Surface (A12)		Depleted O	chric (F1	1) <b>(MLRA</b>	151)		Very Sha	llow Dark Surf	ace (F22)		
Coast Pr	airie Redox (A16) (N	ILRA 1504	A) Iron-Manga	nese Ma	sses (F12	2) (LRR C	), P, T)	(outsid	e MLRA 138,	152A in FL, 154)		
Sandy M	lucky Mineral (S1) <b>(L</b>	.RR O, S)	Umbric Surf	ace (F13	B) (LRR P	, T, U)		Barrier Is	lands Low Chr	roma Matrix (TS7)		
Sandy G	ileyed Matrix (S4)		Delta Ochrid	c (F17) <b>(</b>	MLRA 15	1)		(MLRA	153B, 153D)			
X Sandy R	edox (S5)		Reduced Ve	ertic (F18	3) <b>(MLRA</b>	150A, 15	0B)	Other (E)	plain in Rema	ırks)		
Stripped	Matrix (S6)		Piedmont F	loodplain	Soils (F	9) <b>(MLR</b>	A 149A)					
Dark Sur	face (S7) (LRR P, S	i, T, U)	Anomalous	Bright Fl	oodplain	Soils (F2	0)					
Polyvalu	e Below Surface (S8	3)	(MLRA 14	49A, 153	C, 153D)			<sup>3</sup> Indicator	s of hydrophyt	tic vegetation and		
(LRR S, T, U) Very Shallow Dark					k Surface (F22) wetland hydrology must be					ust be present,		
			(MLRA 1	38, 152A	in FL, 1	54)		unless	disturbed or p	oroblematic.		
_	_ayer (if observed):											
Type:												
Depth (inches):							Hvdric So	oil Presen	t? Yes	X No		

WETLAND DETERMIN See ERDC/E	ATION DATA	SHEET - A			-	Requirement	0710-0024, Exp: 11/30/2024 Control Symbol EXEMPT: R 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		ope					Slope (%): 0-2		
Subregion (LRR or MLRA):	, <u> </u>	Lat:			Long:		Datum:		
Soil Map Unit Name: Mana							ion: PFO4Eg/ PFO4/1C		
· · · · · · · · · · · · · · · · · · ·			this time of your	2	Vac V				
Are climatic / hydrologic con			-				xplain in Remarks.)		
Are Vegetation, Soil						mstances" present?			
Are Vegetation, Soil						any answers in Re			
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 Remarks:		Yes X Yes Yes		Is the Sam within a W	-	Yes	No <u>X</u>		
HYDROLOGY									
Wetland Hydrology Indica	ators:				Sec	condary Indicators (	minimum of two required)		
Primary Indicators (minimu		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)			eposits (B15) <b>(L</b>	-		Drainage Patterns			
Saturation (A3)			gen Sulfide Odo			-	Aoss Trim Lines (B16)		
Water Marks (B1)			ed Rhizospheres	-	bots (C3)	Dry-Season Water			
Sediment Deposits (B2 Drift Deposits (B3)	.)		nce of Reduced It Iron Reduction			Crayfish Burrows (			
Algal Mat or Crust (B4)			luck Surface (C7	· · · · · · · · · · · · · · · · · · ·					
Iron Deposits (B5)			(Explain in Rema			Shallow Aquitard (			
Inundation Visible on A	erial Imagery (E		<b>、</b> •	,	X	FAC-Neutral Test			
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 No _ X		
(includes capillary fringe) Describe Recorded Data (s	tream dauge m	onitoring we	l aerial photos	provious insp	ections) if availa	ble:			
Describe Recorded Data (3	tream gauge, m		ii, aenai priotos,						
Remarks:									
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	40 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.				FAC species 25 x 3 = 75
3.				FACU species 15 $x 4 = 60$
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 Vegetation Indicators:
50% of total cover:		of total cover:	12	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 5 )	20/0			X 2 - Dominance Test is >50%
1. Smilax bona-nox	5	Yes	FAC	$3$ - Prevalence Index is $\leq 3.0^{1}$
2. Parthenocissus quinquefolia	5	Yes	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	5	res	FACU	
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:
	5 20%	of total 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. (7.6 cm) or larger in diameter at breast height (DBH).
1				
2				<b>Sapling</b> – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				
5				Shrub - 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 ft (1 m) in height.
10				
11				<b>Woody Vine</b> – All woody vines, regardless of height.
		=Total Cover		
50% of total cover:	20%	of total cover:		
Woody Vine Stratum (Plot size:)				
1				
2.				
Ζ.				
3.				
3.				
3. 4.				Hydronhytic
3. 4.		=Total Cover		Hydrophytic Vegetation
3. 4.		=Total Cover of total cover:		Hydrophytic Vegetation Present? Yes <u>X</u> No
3.    4.    5.	20%			Vegetation

Depth	Matrix		Redo	x Featu	res							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Те	xture	R	emarks		
0-4	10YR 3/3						Loam	y/Clayey		Loam		
4-5	10YR 5/3						Loam	y/Clayey	Loam w	ith some sand		
5-20	10YR 5/3						S	andy	Fi	ne sand		
	·											
<i>,</i> ,	oncentration, D=Deple					Grains.		<sup>2</sup> Location: PL=		∕/=Matrix. <b>Hydric Soils</b> ³:		
Histosol					-	S. T. U)			(A9) <b>(LRR O</b>	-		
Histosol (A1)Thin Dark Surface (S9) Histic Epipedon (A2) Barrier Islands 1 cm M						-			(A10) <b>(LRR S</b>			
				53B, 153	``	,		Coast Prairie Redox (A16)				
	en Sulfide (A4)		Loamy Muc		,	RR O)			MLRA 150A)	,		
_ ′ ँ	d Layers (A5)		Loamy Gley		· / ·			•	/ertic (F18)			
	Bodies (A6) (LRR P,	r. U)	Depleted M		. ,				MLRA 150A,	150B)		
	ucky Mineral (A7) (LRI		Redox Dark	. ,				•		ls (F19) <b>(LRR P, T</b>		
	resence (A8) (LRR U)	,., <b>.</b> ,	Depleted Da		. ,				•	plain Soils (F20)		
	uck (A9) <b>(LRR P, T)</b>		Redox Depi		( )			(MLRA				
	d Below Dark Surface	(A11)	Marl (F10) (		()			•	t Material (F2	1)		
	ark Surface (A12)	(,)	Depleted O		1) (MLRA	A 151)			ow Dark Surfa	,		
	rairie Redox (A16) ( <b>M</b> I	RA 150A)	·	•	<i>,</i> ,		). P. T)	/		52A in FL, 154)		
	/ucky Mineral (S1) (LF		Umbric Sur		`	, <b>.</b>	,.,. <i>,</i>	•	-	ma Matrix (TS7)		
	Gleyed Matrix (S4)	, ., .,	Delta Ochri						153B, 153D)	( <b>·····</b> )		
_ `	Redox (S5)		Reduced Ve	· /·			(0B)	•	blain in Remarl	(S)		
-	Matrix (S6)		Piedmont F	`	<i>,</i> <b>,</b>					,		
	rface (S7) <b>(LRR P, S</b> ,	T. U)	Anomalous	•	``	<i>,</i> .						
	ie Below Surface (S8)	., .,	(MLRA 14	0	•		-	<sup>3</sup> Indicators	of hydrophytic	c vegetation and		
	S, T, U)		Very Shallo	•					hydrology mu	•		
(	-, -, -,		(MLRA 1		`	,			disturbed or pr	•		
	Layer (if observed):											
Type:												
Depth (i	nches):						Hydri	c Soil Present	? Yes	No X		

WETLAND DETERMINATION DATA SHEE	ps of Engineers T – Atlantic and Gulf Coastal Plain oponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024RegionRequirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
Project/Site: Orsted	City/County: Oce	ean Sampling Date: 5/6/2022
Applicant/Owner: Orsted	· · _	State: NJ Sampling Point: wLC-OP1-WET
Investigator(s): DV, SS, SK	Section Township R	ange: Ocean Twp
		onvex, none): Slope (%):2
Subregion (LRR or MLRA): LRR T		
		ong: Datum: NWI classification: PFO4Eg/ PFO4/1C
Soil Map Unit Name: Manahawkin Muck, 0-2% slo		
Are climatic / hydrologic conditions on the site typic	_	X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology _		rmal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology _	naturally problematic? (If need	ed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling point lo	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	X No Is the Sampled	Area
Hydric Soil Present? Yes		d? Yes <u>X</u> No
Wetland Hydrology Present? Yes	X No	
HYDROLOGY		
X    High Water Table (A2)    I      X    Saturation (A3)    X      X    Water Marks (B1)    0      Sediment Deposits (B2)    I      Drift Deposits (B3)    I      Algal Mat or Crust (B4)    0      Iron Deposits (B5)    0      Inundation Visible on Aerial Imagery (B7)    X      X    Water-Stained Leaves (B9)	Aquatic Fauna (B13) Marl Deposits (B15) <b>(LRR U)</b> Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks)	Secondary Indicators (minimum of two required)
	X Depth (inches):	
	Depth (inches): 10	
Saturation Present? Yes X No	Depth (inches): 4 We	tland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitorir	a well aerial photos, previous inspection	s) if available:
Describe Recorded Data (Stream gauge, mornion		<i>3</i> , ii availabic.
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: <u>3</u> (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. Ilex glabra	30	Yes	FACW	FAC species $30 \times 3 = 90$
3.				FACU species $40 \times 4 = 160$
4.				$\begin{array}{c c} 1 \text{ Acc species} & 40 & 44 \\ \hline \text{UPL species} & 0 & x5 = 0 \end{array}$
5				Column Totals: 160 (A) 430 (B)
6				Prevalence Index = B/A =2.69
		=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.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
····		=Total Cover		Definitions of Five Vegetation Strata:
50% of total cover:	20%	of total cover:		<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)				approximately 20 ft (6 m) or more in height and 3 in. (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 herbaceous (non-woody) plants, including
0				herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately 3
10.				ft (1 m) in height.
				<b>Woody Vine</b> – All woody vines, regardless of height.
11				
		=Total Cover		
50% of total cover:	20%	of total cover:		
Woody Vine Stratum (Plot size:)				
1				
2.				
3.				
4.				
5.				I history history
		=Total Cover		Hydrophytic Vegetation
50% of total cover:		of total cover:		Present? Yes X No
Remarks: (If observed, list morphological adaptation				

Color (moist)      %      Color (moist)      %      Type!      Loc <sup>2</sup> Texture      Remarks        0-6      5YR 4/2	Profile Description: (Describe to the depth Depth Matrix		ument tr x Featur		itor or c	onfirm the absend	ce of indicators.)			
6-20    2.5YR 5/1    Muck    Organic muck      ************************************	·				Loc <sup>2</sup>	Texture	Remarks			
'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*:      Histic Epipedon (A2)    Barrier Islands 1 cm Muck (S12)    2    Coast Praine Redox (A16)      Histic Epipedon (A2)    Barrier Islands 1 cm Muck (S12)    Coast Praine Redox (A16)    (ULRR S)      Black Histic (A3)    (MLRA 153B, 153D)    Coast Praine Redox (A16)    (outside MLRA 150A)      Stratified Layers (A5)    Loamy Gleyed Matrix (F2)    Reduced Vertic (F18)    (outside MLRA 150A, 150B)      Organic Bodies (A6) (LRR P, T, U)    Depleted Dark Surface (F6)    Piedmont Floodplain Solis (F19) (LRR F    Muck (A10)      Muck Presence (A8) (LRR P, T)    Redox Depressions (F8)    (MLRA 153B)    (Dutside MLRA 153B)    Solis (F20)      Depleted Below Dark Surface (A11)    Mari (F10) (LRR U)    Pelpeleted Ochric (F11) (MLRA 151)    Very Shallow Dark Surface (F22)    Other (Explain in Remarks)      Sandy Mucky Mineral (S1) (LRR O, S)    Umbric Surface (F13) (LLR A 150A, 150B)    Other (Explain in Remarks)    Sindicators of hydrophydic vegetation and unlessolis (F20)	0-6 5YR 4/2					Mucky Loam/Cla	ay Peaty loam			
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)    1 cm Muck (A9) (LRR O)      Black Histic (A3)    (MLRA 153B, 153D)    Coast Prairie Redox (A16)      X Hydrogen Sulfide Layers (A5)    Loamy Mucky Mineral (F1) (LRR O)    coast Prairie Redox (A16)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F2)    Reduced Vertic (F18)      Muck Presence (A8) (LRR U)    Depleted Dark Surface (F7)    Anomalous Bright Floodplain Soils (F20)      Muck Presence (A8) (LRR V)    Depleted Ochric (F11) (MLRA 151)    Very Shallow Dark Surface (F22)      Coast Prairie Redox (A16) (MLRA 150A)    Iron-Manganese Masses (F12) (LRR O, P, T)    Red Parent Material (F21)      Sandy Mucky Mineral (S1) (LRR O, S)    Umbric Surface (F13) (MLRA 150A, 150B)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F10) (MLRA 150), 100Hinc R 151)    Very Shallow Dark Surface (F22)      Muck RS, T, U)    Anomalous Bright Floodplain Soils (F13) (MLRA 149A)    Muck Ratrial (S10) (LRR O, S)      Sandy Redox (S5)    Reduced Vertic (F13) (MLRA 150A, 150B)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    Mult A 138, 152A in FL, 154)      Dark Surfa	6-20 2.5YR 5/1					Muck	Organic muck			
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)    1 cm Muck (A9) (LRR O)      Biack 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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      S cm Muck (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)      Thick Dark Surface (A11)    Marl (F10) (LRR U)    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) (MLRA 150A, 150B)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodpl										
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)    1 cm Muck (A9) (LRR O)      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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      5 cm Muck (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)    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 151)    (MLRA 153B, 153D)      Sandy Redox (S5)    Reduced Vertic (F18) (MLRA 150A, 150B)    Other (Explain in										
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)    1 cm Muck (A9) (LRR O)      Histosol (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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      5 cm Muck (M9) (LRR P, T, U)    Redox Dark Surface (F7)    Anomalous Bright Floodplain Soils (F19) (LRR F      Muck Presence (A8) (LRR V)    Depleted Dark Surface (F11)    (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)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    (MLRA 153B										
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)    1 cm Muck (A9) (LRR O)      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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      5 cm Muck (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)    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 151)    (MLRA 153B, 153D)      Sandy Redox (S5)    Reduced Vertic (F18) (MLRA 150A, 150B)    Other (Explain in		<u> </u>								
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)    1 cm Muck (A9) (LRR O)      Histosol (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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      5 cm Muck (M9) (LRR P, T, U)    Redox Dark Surface (F7)    Anomalous Bright Floodplain Soils (F19) (LRR F      Muck Presence (A8) (LRR V)    Depleted Dark Surface (F11)    (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)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    (MLRA 153B										
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)    1 cm Muck (A9) (LRR O)      Histosol (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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    (outside MLRA 150A, 150B)      5 cm Muck (M9) (LRR P, T, U)    Redox Dark Surface (F7)    Anomalous Bright Floodplain Soils (F19) (LRR F      Muck Presence (A8) (LRR V)    Depleted Dark Surface (F11)    (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)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    (MLRA 153B										
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 (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 (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 Matrix (F3)    (outside MLRA 150A), 150B)      6 mucky Mineral (A7) (LRR P, T, U)    Redox 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 (A6) (MLRA 150A)    Iron-Manganese Masses (F12) (LRR O, P, T)    Gutside MLRA 138, 152A in FL, 154      Sandy Mucky Mineral (S1) (LRR O, S)    Delta Ochric (F17) (MLRA 150A, 150B)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    (MLRA 1438, 152A in FL, 154)	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.			
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 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) (strate (F19) (LRR P)      Muck Presence (A8) (LRR P, T)    Redox Dark Surface (F6)    Piedmont Floodplain Soils (F19) (LRR P)      Muck Presence (A8) (LRR P, T)    Redox Dark Surface (F7)    Anomalous Bright Floodplain Soils (F20)      1 cm Muck (A9) (LRR P, T)    Redox Dark Surface (F7)    Anomalous Bright Floodplain Soils (F20)      Coast Prairie Redox (A16)    MLRA 150A)    Iron-Manganese Masses (F12) (LRR O, P, T)      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 151)    Very Shallow Dark Surface (F22)      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				-			•	ils <sup>3</sup> :		
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 (F2)    Reduced Vertic (F18)      Organic Bodies (A6) (LRR P, T, U)    Depleted Matrix (F3)    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 (F13) (LRR P, T, U)    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)    MILRA 1338, 152A in FL, 154)      Dark Surface (S7) (LRR P, S, T, U)    Anomalous Bright Floodplain Soils (F20)    MILRA 138, 152A in FL, 154)      Polyvalue Below Surface (S8)    (MLRA 138, 152A in	Histosol (A1)				-	1 cm	n Muck (A9) <b>(LRR O)</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 (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 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 (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)    Goutside MLRA 138, 152A in FL, 154      Sandy Mucky Mineral (S1) (LRR O, S)    Umbric Surface (F13) (LRR A 150A, 150B)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20)    Other (Explain in Remarks)      Polyvalue Below Surface (S8)    (MLRA 149A, 153C, 153D)    Other (Explain in Remarks)      Stripped Matrix (S6)    Piedmont Floodplain Soils (F20) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problemati	Histic Epipedon (A2)			``	12)	2 cm	n Muck (A10) <b>(LRR S)</b>			
Stratified Layers (A5)    Loamy Gleved 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 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) (LRR P, T, U)    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 138, 152A in FL, 154)    anomalous gright Floodplain Soils (F20)      Polyvalue Below Surface (S8)    (MLRA 138, 152A in FL, 154)    anomalous wetland hydrology must be present, unless disturbed or problematic. <t< td=""><td>Black Histic (A3)</td><td>(MLRA 15</td><td>3B, 153</td><td>D)</td><td></td><td>Coa</td><td>ast Prairie Redox (A16)</td><td></td></t<>	Black Histic (A3)	(MLRA 15	3B, 153	D)		Coa	ast Prairie Redox (A16)			
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 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) (LRR P, T, U)    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)      Very Shallow 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, 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)			
5 cm Mucky Mineral (A7) (LRR P, T, U)    Redox Dark Surface (F6)    Piedmont Floodplain Soils (F19) (LRR P      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) (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 (F20)    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:	Stratified Layers (A5)	Loamy Gleye	ed Matrix	k (F2)		Reduced Vertic (F18)				
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) (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 (F20)    (MLRA 149A)      Dark Surface (S7) (LRR P, S, T, U)    Anomalous Bright Floodplain Soils (F20)    3Indicators 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)			
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)    Other (Explain in Remarks)      Dark Surface (S7) (LRR P, S, T, U)    Anomalous Bright Floodplain Soils (F20)    3 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)		
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 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)    3Indicators of hydrophytic vegetation and wetland hydrology must be present, (MLRA 138, 152A in FL, 154)      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 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)      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:	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)    3Indicators of hydrophytic vegetation and wetland hydrology must be present, (MLRA 138, 152A in FL, 154)      Restrictive Layer (if observed):    Type:    Depth (inches):    Yes X    No      Remarks:    Remarks:    Hydric Soil Present?    Yes X    No	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)    3Indicators of hydrophytic vegetation and wetland hydrology must be present, (MLRA 138, 152A in FL, 154)      Restrictive Layer (if observed):    Type:	Thick Dark Surface (A12)		-	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)      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)    wetland hydrology must be present, unless disturbed or problematic.      Restrictive Layer (if observed):    Type:	Coast Prairie Redox (A16) (MLRA 150A)				-	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)      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 Very Shallow Dark Surface (F22)      (MLRA 138, 152A in FL, 154)    unless disturbed or problematic.      Restrictive Layer (if observed):    Type:      Depth (inches):       Depth (inches):       Remarks:    Yes_X_No								-		
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.      Type:					-			( - )		
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):       Remarks:    Hydric Soil Present?    Yes X						•				
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):			•			·				
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.      (LRR S, T, U)    Very Shallow Dark Surface (F22)    wetland hydrology must be present, unless disturbed or problematic.      Restrictive Layer (if observed):    Type:						-				
(LRR S, T, U)			-	•		,	licators of hydrophytic vegetatio	n and		
(MLRA 138, 152A in FL, 154)    unless disturbed or problematic.      Restrictive Layer (if observed):    Type:      Depth (inches):    Hydric Soil Present?    Yes X No      Remarks:    Yes X No		•								
Restrictive Layer (if observed):	(LKK 3, 1, 0)							5111,		
Type:		(WILKA IS	0, IJZA	III FL, 1	94)	T	Thess disturbed of problematic.			
Depth (inches):										
Remarks:										
	Depth (inches):					Hydric Soil Pro	esent? Yes X No			
Organic material/ leaf litter 3"										
	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
	Section, Township, Range: Oc	
		e): Slope (%):0-2
Soil Map Unit Name: Manahawkin Muck 0-2% slopes, frequently flood	Long:	NWI classification: PFO4Cg
Are climatic / hydrologic conditions on the site typical for this time of ye		No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly di		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		
		conden (Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	<u>500</u>	condary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15)		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	. ,	Crayfish Burrows (C8)
	on in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface ( Iron Deposits (B5) Other (Explain in Re		Geomorphic Position (D2) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		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	Dominant	Indicator	
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test worksheet:
1. Chamaecyparis thyoides	50	Yes	OBL	Number of Dominant Species
2. Pinus rigida	20	Yes	FACU	That Are OBL, FACW, or FAC: <u>3</u> (A)
3. Acer rubrum	10	No	FAC	Total Number of Dominant
4.			<u> </u>	Species Across All Strata: 5 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 60.0% (A/B)
	80=T	otal 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 80 x 1 = 80
1. Chamaecyparis thyoides	30	Yes	OBL	FACW species 10 x 2 = 20
2. Ilex opaca	5	No	FAC	FAC species 15 x 3 = 45
3. Clethra alnifolia	10	Yes	FACW	FACU species 30 x 4 = 120
4.				UPL species 0 x 5 = 0
5.				Column Totals: 135 (A) 265 (B)
6.				Prevalence Index = $B/A = 1.96$
	45 =T	otal Cover		Hydrophytic Vegetation Indicators:
50% of total cover: 2		total cover:	9	1 - Rapid Test for Hydrophytic Vegetation
	20/80		3	X 2 - Dominance Test is >50%
	40	Vee	FACU	
1. <u>Mitchella repens</u>	10	Yes	FACU	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.	<u> </u>			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				
4			<u> </u>	
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6				present, unless disturbed or problematic.
	<u>    10    </u> =T	otal Cover		Definitions of Five Vegetation Strata:
50% of total cover:	5 20% of	total cover:	2	Tree – 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,
6.				approximately 3 to 20 ft (1 to 6 m) in height.
7				
7. 8.				<b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody
	<u> </u>			plants, except woody vines, less than approximately 3
9			<u> </u>	ft (1 m) in height.
10				<b>Woody Vine</b> – All woody vines, regardless of height.
11			<u> </u>	woody vine – Air woody vines, regardless of height.
		otal Cover		
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size:)				
1				
2.				
3.				
4.				
5.	·			
	 =T	otal Cover		Hydrophytic
50% of total cover:		total cover:		Vegetation Present? Yes X No
Remarks: (If observed, list morphological adaptation	na Delow.)			

Depth	Matrix		Redr	x Featu	res							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text	ure		Rer	narks	
0-3	7.5YR 3/2	100					Loamy/0	Clayey		loam with	organic top	
3-20 2.5YR 6/6 100						San	dy		sand with '	10% pebbles		
	Dincentration, D=Depl	etion RM-	Reduced Matrix				21	ocation: F	Pl –Pore	Lining, M=	-Matrix	
71	Indicators: (Applica	,	,								ydric Soils <sup>3</sup> :	
Histosol		Thin Dark S			S. T. U)				-			
Histic Ep	Barrier Islan		<i>,</i> .			1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S)						
Black Hi		(MLRA 153B, 153D)						Coast Prairie Redox (A16)				
Hydroge		Loamy Mucky Mineral (F1) (LRR O)						(outside MLRA 150A)				
Stratified		Loamy Gleyed Matrix (F2)						Reduced Vertic (F18)				
Organic Bodies (A6) (LRR P, T, U)			Depleted Ma					A 150A, 1	50B)			
	icky Mineral (A7) (LR		Redox Dark	. ,				•		•	(F19) <b>(LRR P, T</b> )	
	esence (A8) (LRR U)		Depleted Da		· · ·						ain Soils (F20)	
	ick (A9) (LRR P, T)		Redox Depr	essions	(F8)			 (MLR	A 153B)	·	( )	
	Below Dark Surface	e (A11)	 Marl (F10) (	LRR U)	( )			Red Pa	rent Mat	erial (F21)		
Thick Da	ark Surface (A12)	. ,	Depleted Oc	hric (F1	1) (MLR/	A 151)		Very Sh	allow Da	ark Surface	e (F22)	
Coast P	rairie Redox (A16) (N	ILRA 150A	Iron-Mangar	nese Ma	sses (F1	2) (LRR O	), P, T)	(outs	de MLR	A 138, 152	2A in FL, 154)	
Sandy M	lucky Mineral (S1) <b>(L</b>	RR O, S)	Umbric Surf	ace (F1:	B) (LRR F	P, T, U)		Barrier	slands L	ow Chrom	a Matrix (TS7)	
Sandy G	leyed Matrix (S4)		Delta Ochrid	(F17) <b>(</b>	MLRA 15	1)		(MLR	A 153B,	153D)		
Sandy R	edox (S5)		Reduced Ve	ertic (F18	B) (MLRA	150A, 15	0B)	Other (E	Explain ir	n Remarks	)	
Stripped	Matrix (S6)		Piedmont Fl	oodplair	n Soils (F	19) <b>(MLR</b>	A 149A)					
Dark Su	rface (S7) <b>(LRR P, S</b>	, T, U)	Anomalous	Bright F	loodplain	Soils (F20	D)					
Polyvalu	e Below Surface (S8	)	(MLRA 14	9A, 153	C, 153D)			<sup>3</sup> Indicat	ors of hy	drophytic v	egetation and	
(LRR	S, T, U)		Very Shallov (MLRA 13		`	,				ology must bed or prob	be present, lematic.	
Restrictive I	_ayer (if observed):											
Type:												
<b>D</b>	nches):						Hydric 9	Soil Prese	nt?	Yes	No X	
	U.S. Army Corps of Engineers TLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R							1/30/2024 (EMPT: h 5-2a)				
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Project/Site: Orsted				City/Count	ty: Ocean		Sampling Date:	5/6/2022				
Applicant/Owner: Orste	d			_ `		State: NJ						
Investigator(s): SS,DV,SK	<u>.</u>		Se	ection Towns	ship, Range: Oce							
	atc.): Depressi	an					Slope (%):	0-2				
Landform (hillside, terrace, e												
Subregion (LRR or MLRA):					Long:		Datum:					
Soil Map Unit Name: Mana							tion: PFO4Cg					
Are climatic / hydrologic con			-		Yes X	No (If no,	explain in Remark					
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		Yes X Yes X Yes X	No No No	Is the San within a W	npled Area Vetland?	Yes <u>X</u>	No					
Remarks:												
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						
Surface Water (A1)		Aquatio	c Fauna (B13)			Sparsely Vegetat	ed Concave Surfa	ce (B8)				
X High Water Table (A2)			eposits (B15) <b>(L</b>	-		Drainage Patterns (B10)						
X Saturation (A3)			jen Sulfide Odoi		Moss Trim Lines (B16)							
Water Marks (B1)			ed Rhizospheres	-	oots (C3)							
Sediment Deposits (B2	.)		ce of Reduced	. ,								
Drift Deposits (B3) Algal Mat or Crust (B4)			Iron Reduction uck Surface (C7		ils (C6) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)							
Iron Deposits (B5)			Explain in Rema			Shallow Aquitard						
Inundation Visible on A	erial Imagery (B				x	FAC-Neutral Test	. ,					
X Water-Stained Leaves	0,1	,				- Sphagnum Moss						
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:						
Remarks:												
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.				
4.				Total Number of Dominant Species Across All Strata: 6 (B)
				Species Across All Strata: <u>6</u> (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 $30 \times 2 = 60$
				FAC species $0   x 3 = 0$
3				FACU species 30 $x 4 = 120$
4.				UPL species x 5 =
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	FACW	$\frac{1}{X}$ 3 - Prevalence Index is $\leq 3.0^{1}$
	20	Yes		
2. Clethra alnifolia	10	Yes	FACW	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.
	30	=Total Cover		Definitions of Five Vegetation Strata:
50% of total cover: 1	5 20%	of total actions	6	
		of total cover:		<b>Tree</b> — Woody plants, excluding woody vines
Herb Stratum (Plot size: 5 )	5 20%	of 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 )				approximately 20 ft (6 m) or more in height and 3 in.
1. Polygonatum biflorum	5	Yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
				approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines,
1. Polygonatum biflorum	5	Yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
<ol> <li>Polygonatum biflorum</li> <li>Carex stricta</li> </ol>	5	Yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines,
<ol> <li>Polygonatum biflorum</li> <li>Carex stricta</li> </ol>	5	Yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
<ol> <li>Polygonatum biflorum</li> <li>Carex stricta</li> <li>4.</li> <li>5.</li> </ol>	5	Yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
1.       Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>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>
Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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</li> </ul>
Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
Polygonatum biflorum         2.       Carex stricta         3.	5	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> 5 	Yes	FACU	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>approximately 20 ft (6 m) or more in height and 3 in.</li> <li>(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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u></u>	Yes Yes	FACU OBL	<ul> <li>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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>10</u> <u>5</u> 20%	Yes Yes	FACU OBL	<ul> <li>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</li> </ul>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>10</u> <u>5</u> 20%	Yes Yes Total Cover of total cover:	FACU OBL	<ul> <li>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>
1.       Polygonatum biflorum         2.       Carex stricta         3.	<u>5</u> <u>5</u> <u>10</u> <u>5</u> <u>20%</u>	Yes Yes	FACU OBL	<ul> <li>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</li> </ul>

SOIL

Pepth Matrix		x Features	1 1 2	<b>T</b> a		Demend	-
nches) Color (moist) %	Color (moist)	% Туре	e <sup>1</sup> Loc <sup>2</sup>	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						blematic Hydrid	<u>^</u>
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)		ace (F13) <b>(LR</b> I	-			Low Chroma M	atrix (TS7)
Sandy Gleyed Matrix (S4)		(F17) <b>(MLRA</b>			(MLRA 153		
Sandy Redox (S5)		rtic (F18) <b>(ML</b> I		· —	Other (Explair	in Remarks)	
Stripped Matrix (S6)		oodplain Soils		-			
Dark Surface (S7) (LRR P, S, T, U)		Bright Floodpla			3		
Polyvalue Below Surface (S8)	•	9A, 153C, 153	-			hydrophytic vege	
(LRR S, T, U)		v Dark Surface			-	Irology must be p	
	(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							

WETLAND DETERMINATION DA	U.S. Army Corps of Engineers VETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Regi- See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R							
Project/Site: Marina Property		City/County: Waretown/Oce	ean Sa	mpling Date: 6/1/22				
Applicant/Owner: Orsted- Ocean Wi	nd			mpling Point: WET E-UP(Marina)				
Investigator(s): S. Seymour, S. Kirkpatri		ection, Township, Range: Wa						
Landform (hillside, terrace, etc.): hillslo		Il relief (concave, convex, none		Slope (%):				
Subregion (LRR or MLRA): LRR T	Lat: 39.799414	Long: -74.18		_ Clope (70) Datum:				
Soil Map Unit Name: Berryland sand, 0-		Long74.10	NWI classification:					
· · · · · · · · · · · · · · · · · · ·								
Are climatic / hydrologic conditions on th				ain in Remarks.)				
Are Vegetation, Soil, or H			mstances" present?	Yes X No				
Are Vegetation, Soil, or H	ydrology naturally probler	natic? (If needed, explain	any answers in Remain	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					
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		Moss Trim Lines (B16					
Water Marks (B1)	Oxidized Rhizospheres		Dry-Season Water Ta					
Sediment Deposits (B2) Drift Deposits (B3)	Presence of Reduced Recent Iron Reduction		Crayfish Burrows (C8) Saturation Visible on					
Algal Mat or Crust (B4)	Thin Muck Surface (C		Geomorphic Position	<b>0</b> , (, )				
Iron Deposits (B5)	Other (Explain in Rem		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								
Water Table Present? Yes			- I					
Saturation Present? Yes (includes capillary fringe)	No X Depth (inches	Wetland Hydi	rology Present?	Yes <u>No X</u>				
Describe Recorded Data (stream gauge	monitoring well, aerial photos.	previous inspections), if availa	ble:					
	,							
Remarks:								

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#### 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 worksheet:
1. Pinus rigida	40	Yes	FACU	Number of Dominant Species
2. Quercus alba	30	Yes	FACU	That Are OBL, FACW, or FAC:(A)
3. Nyssa sylvatica	10	No	FAC	Total Number of Dominant
4	1			Species Across All Strata: 4 (B)
5				Percent of Dominant Species
6	1			That Are OBL, FACW, or FAC: 50.0% (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)
Δ				Prevalence Index = $B/A = 3.45$
5.				Hydrophytic Vegetation Indicators:
6.	<b>.</b>			1 - Rapid Test for Hydrophytic Vegetation
·				
7				2 - Dominance Test is >50%
8				3 - Prevalence Index is ≤3.0 <sup>1</sup>
	20	=Total Cover		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	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
9.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
	1			
10				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:		height.
Woody Vine Stratum (Plot size: 30 )				
1. Smilax rotundifolia	10	Yes	FAC	
2.				
3.				
4.	,			
5.				
	10	=Total Cover		Hydrophytic
50% of total cover: 5		of total cover:	2	Vegetation Present? Yes No X
50% of total cover: 5	20%			Present?         Yes         No         X
Remarks: (If observed, list morphological adaptation				
Root zone in the upper 12" of the soil profile. No her	bacous laye	r.		

SOIL

	ription: (Describe	to the dept				tor or c	onfirm th	e absence	of indic	ators.)		
Depth (in the c)	Matrix			x Featu	4	1 - 2	т.			D.		
inches)	Color (moist)	%	Color (moist)	%	Type'	Loc <sup>2</sup>	Texture		ure Remarks		marks	
0-4	10YR 3/3	100					Mucky Loam/Clay			Dry organic loam, fine		е
4-8	10YR 4/2	100					S	andy		Loamy sa	nd (dry), fin	e
8-20	10YR 6/2	100					S	andy		Dry s	and, fine	
					·							
Type: C=C	oncentration, D=Dep	letion, RM=I	Reduced Matrix, I	MS=Mas	ked Sand	Grains.		<sup>2</sup> Location:	PL=Por	e Lining, M	=Matrix.	
lydric Soil	Indicators: (Applica	ble to all L	RRs, unless oth	erwise I	noted.)			Indicators	for Pro	blematic H	ydric Soils	<sup>3</sup> :
Histosol	(A1)		Thin Dark S	urface (	S9) <b>(LRR</b>	S, T, U)		1 cm N	luck (A9	) <b>(LRR O)</b>		
Histic Ep	pipedon (A2)		Barrier Islar	ds 1 cm	Muck (S	12)		2 cm N	luck (A1	0) (LRR S)		
Black Hi	stic (A3)	(MLRA 1	53B, 153	BD)			Coast	Prairie R	Redox (A16)	)		
Hydroge	n Sulfide (A4)	Loamy Muc	ky Minei	ral (F1) <b>(L</b>	RR O)		(out:	side ML	RA 150A)			
Stratified Layers (A5)			Loamy Gley	ed Matr	ix (F2)			Reduc	ed Vertic	c (F18)		
Organic Bodies (A6) (LRR P, T, U) Dep				atrix (F3	)			(out	side ML	RA 150A, 1	50B)	
5 cm Mu	icky Mineral (A7) <b>(LF</b>	RR P, T, U)	Redox Dark	edox Dark Surface (F6) P						dplain Soils	(F19) <b>(LRF</b>	R P, T
Muck Pr	esence (A8) <b>(LRR U</b>	)	Depleted Da	ark Surfa	ace (F7)			Anoma	lous Bri	ght Floodpl	ain Soils (F	20)
 1 cm Mu	ick (A9) (LRR P, T)		Redox Depr	essions	(F8)			(MLF	RA 153B	5)		
Depleted	Below Dark Surface	e (A11)	Marl (F10) (	LRR U)			Red Parent Material (F21)					
Thick Da	ark Surface (A12)		Depleted O	chric (F1	1) (MLRA	(151)		Very S	hallow D	Dark Surfac	e (F22)	
Coast P	rairie Redox (A16) (N	ILRA 150A)	Iron-Manga	nese Ma	sses (F12	2) (LRR	O, P, T)	(out	side ML	RA 138, 15	2A in FL, 1	54)
Sandy M	lucky Mineral (S1) (L	.RR O, S)	Umbric Surf	ace (F1	3) (LRR F	, T, U)		Barrier	Islands	Low Chron	na Matrix (T	S7)
Sandy G	Bleyed Matrix (S4)	-	Delta Ochrid	; (F17) <b>(</b>	MLRA 15	1)		(MLF	RA 153B	, 153D)		
Sandy R	edox (S5)		Reduced Ve	ertic (F1	B) (MLRA	150A, 1	50B)	Other	Explain	in Remarks	3)	
Stripped	Matrix (S6)		Piedmont F	oodplair	n Soils (F	9) (MLF	RA 149A)				,	
	rface (S7) (LRR P, S	, T, U)	Anomalous	•		<i>,</i> .						
	e Below Surface (S8		(MLRA 14	0	•	•		<sup>3</sup> Indica	tors of h	ydrophytic	vegetation a	and
	S, T, U)	,	Very Shallo								t be present	
•			(MLRA 1:			,			•	rbed or prol		
Restrictive	Layer (if observed):											
Type:							1					
Depth (ir	nches):						Hvdri	c Soil Pres	ent?	Yes	No	Х

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: Wa					
Landform (hillside, terrace, etc.): Level							
		Long: -74.1					
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.)				
			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		Drainage Patterns (B10)				
X Saturation (A3)	X Hydrogen Sulfide Odo		Moss Trim Lines (B16)				
Water Marks (B1) Sediment Deposits (B2)	Oxidized Rhizospheres Presence of Reduced		Dry-Season Water Table (C2) Crayfish Burrows (C8)				
X Drift Deposits (B3)	Recent Iron Reduction		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Thin Muck Surface (C		Geomorphic Position (D2)				
Iron Deposits (B5)	Other (Explain in Rem	·	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery			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		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 Species?	Indicator Status	Dominance Test worksheet:
1. Nyssa sylvatica	45	Yes	FAC	
2.				Number of Dominant Species           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 x 1 =
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>
		=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.				<b>Sapling/Shrub</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 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 adaptatio	ns helow )			
		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 document the indicator or Depth Matrix Redox Features												
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e	F	Remarks		
0-5	10YR 2/1	100					Mucky Loan	n/Clay	Wet orga	nic loam, dense		
5-20	10YR 6/1	100				_	Sandy		Gleyed	fine sand, wet		
21	oncentration, D=Depl					Grains.			Pore Lining,	0		
	Indicators: (Applica	ble to all L				о т III				Hydric Soils <sup>3</sup> :		
Histosol (A1) Thin Dark Surface (S9) <b>(LRR S, T</b> Histic Epipedon (A2) Barrier Islands 1 cm Muck (S12)									(A9) <b>(LRR O</b>			
					12)			(A10) <b>(LRR</b> in Doday (A1	-			
				53B, 153					rie Redox (A1	,		
X Hydrogen Sulfide (A4) Loamy Muc Stratified Layers (A5) Loamy Gley				•	• • •	KK U)		•	e MLRA 150A)	)		
					. ,				/ertic (F18)	4500)		
			Depleted Ma		,			•	MLRA 150A	•		
	ucky Mineral (A7) (LR	· · · ·	Redox Dark		. ,				·	bils (F19) <b>(LRR P, 1</b>		
	resence (A8) (LRR U)		Depleted Da		. ,				0	lplain Soils (F20)		
	uck (A9) <b>(LRR P, T)</b>	(111)	Redox Depr		(F8)			(MLRA				
	d Below Dark Surface	e (A11)	Marl (F10) (			454)		Red Parent Material (F21) Very Shallow Dark Surface (F22)				
	ark Surface (A12)		Depleted Oc		, .		о р т) <u>—</u>			( )		
	rairie Redox (A16) (M				`	, <b>.</b>	0, P, I)	•		152A in FL, 154)		
	Mucky Mineral (S1) <b>(L</b>	KK 0, 3j	Umbric Surf							oma Matrix (TS7)		
	Gleyed Matrix (S4)		Delta Ochrid Reduced Ve			•	50D)	(MLRA 153B, 153D) 50B) Other (Explain in Remarks)				
	Redox (S5) I Matrix (S6)		Piedmont F		<i>,</i> .					K5)		
	Inface (S7) <b>(LRR P, S</b>	т н	Anomalous				-					
	ue Below Surface (S8)	-	(MLRA 14	-		30115 (17)	20)	<sup>3</sup> Indicators	of hydrophyti	ic vegetation and		
	S, T, U)	)	Very Shallo			22)				ust be present,		
	3, 1, 0)		(MLRA 13		`	,			disturbed or pi	•		
	Layer (if observed):											
Type:												
Donth (i	nches):						Hydric So	il Present	? Yes	X No		

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
	relief (concave, convex, none	e): level Slope (%): 0
Subregion (LRR or MLRA): LRR T Lat: 39.801530	Long: -74.18	
Soil Map Unit Name: Psammaquents, frequently flooded		NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year	Yes X	No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology _X_ significantly distu		nstances" present? Yes No X
Are Vegetation, Soil, or Hydrologynaturally problem		any answers in Remarks.)
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		Moss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizospheres	• · · · ·	Dry-Season Water Table (C2)
Sediment Deposits (B2)Presence of Reduced I		Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface (C7		Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Rema Inundation Visible on Aerial Imagery (B7)	<u> </u>	Shallow Aquitard (D3) FAC-Neutral Test (D5)
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)		
Saturation Present? Yes X No Depth (inches)		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	• •	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 Domina % Cover Species		Dominance Test worksheet:
1.			
2.			Number of Dominant Species           That Are OBL, FACW, or FAC:         1         (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: 100.0% (A/B) Prevalence Index worksheet:
7			
8	=Total Cov		Total % Cover of: Multiply by:
E00/ of total action			OBL species $0 \times 1 = 0$
50% of total cover:	20% of total co	ver	FACW species90 $x 2 =$ 180FAC species0 $x 3 =$ 0
Sapling/Shrub Stratum (Plot size: 15 )			
1			FACU species $0   x 4 = 0$
2.			UPL species $0 \times 5 = 0$
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/Shrub</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 of size, and woody plants less than 3.28 ft tall.
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			height.
Woody Vine Stratum (Plot size: 30 )			
2.			
5.			
5			Hydrophytic
	=Total Cov		Vegetation
50% of total cover:	20% of total co	ver:	Present? Yes <u>X</u> No
Remarks: (If observed, list morphological adaptation	is below.)		

SOIL

Depth	Matrix		Redo	x Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Tex	ture		Remarks
0-20	10yr 2/1	100					М	uck	Organic muck wit	h reed grass rhizomes, saturate
Type: C=C	oncentration, D=Dep	etion RM=	Reduced Matrix	MS=Mas	ked Sand	Grains	2	l ocation.	PL=Pore Lining	n M=Matrix
<i>,</i> ,	Indicators: (Applica	-								ic Hydric Soils <sup>3</sup> :
X Histosol			Thin Dark S			S, T, U)			luck (A9) <b>(LRR</b>	•
Histic Ep	pipedon (A2)	Barrier Islan	ds 1 cm	Muck (S	12)	_	2 cm N	luck (A10) <b>(LR</b>	R S)	
Black Histic (A3)			(MLRA 15	53B, 153	D)		_	Coast	Prairie Redox (	A16)
X Hydroge	n Sulfide (A4)		Loamy Muc	ky Miner	al (F1) <b>(L</b>	RR O)	-	(outs	side MLRA 150	DA)
Stratified	d Layers (A5)		Loamy Gley	ed Matriz	x (F2)			Reduc	ed Vertic (F18)	
Organic	Bodies (A6) (LRR P,	T, U)	Depleted Ma	atrix (F3)			-	(outs	side MLRA 150	)A, 150B)
5 cm Mu	icky Mineral (A7) <b>(LR</b>	R P, T, U)	Redox Dark	Surface	(F6)			Piedmo	ont Floodplain \$	Soils (F19) <b>(LRR P, T)</b>
Muck Pr	esence (A8) <b>(LRR U</b> )	)	Depleted Da	ark Surfa	ce (F7)			Anoma	lous Bright Flo	odplain Soils (F20)
1 cm Mu	ick (A9) <b>(LRR P, T)</b>		Redox Depr	essions	(F8)			(MLF	RA 153B)	
Depleted	d Below Dark Surface	e (A11)	Marl (F10) (	LRR U)				Red Pa	arent Material (	F21)
Thick Da	ark Surface (A12)		Depleted Oc	chric (F1	1) (MLRA	A 151)	-	Very S	hallow Dark Su	Irface (F22)
Coast P	rairie Redox (A16) ( <b>N</b>	ILRA 150A)	Iron-Mangar	nese Ma	sses (F12	2) (LRR O,	P, T)	(outs	side MLRA 138	3, 152A in FL, 154)
Sandy M	lucky Mineral (S1) <b>(L</b>	.RR O, S)	Umbric Surf	ace (F13	B) (LRR F	P, T, U)		Barrier	Islands Low C	hroma Matrix (TS7)
Sandy G	Bleyed Matrix (S4)		Delta Ochrid	: (F17) <b>(</b>	MLRA 15	1)	-	(MLF	RA 153B, 153D	)
Sandy R	edox (S5)		Reduced Ve	Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b>				Other (Explain in Remarks)		
Stripped	Matrix (S6)		Piedmont Fl	oodplain	Soils (F	19) <b>(MLRA</b>	149A)			
Dark Su	rface (S7) (LRR P, S	, T, U)	Anomalous	Bright Fl	oodplain	Soils (F20)	)			
Polyvalu	e Below Surface (S8	)	(MLRA 14	9A, 153	C, 153D)			<sup>3</sup> Indica	tors of hydroph	ytic vegetation and
(LRR	S, T, U)		Very Shallov	w Dark S	Surface (F	22)		wetla	and hydrology i	must be present,
			(MLRA 13	88, 152A	in FL, 1	54)		unle	ss disturbed or	problematic.
Restrictive I	Layer (if observed):									
Type:										
Depth (ir	nches):						Hydric	Soil Pres	ent? Ye	s X No

U.S. Army WETLAND DETERMINATION DATA See ERDC/EL TR-10-20; t	OMB Control #: 0710-00 Requirement Control (Authority: AR 335-15	Symbol EXEMPT:				
Project/Site: Holiday Beach Club Applicant/Owner: Orstead/ Ocean Wind		City/County: Waretown/ Oc		ing Date: 7/6/2022 ing Point: WET F UP		
Investigator(s): S. Seymour, D. Healy	Sec	ction, Township, Range:				
Landform (hillside, terrace, etc.): level	relief (concave, convex, none	a): none S	lope (%): 0			
				· · · ·		
Subregion (LRR or MLRA): LRR T	Lat: <u>39.800263</u>	Long: -74.17		Datum:		
Soil Map Unit Name: Psammaquents, 0-2%	slope, frequently flooded		NWI classification: No	one		
Are climatic / hydrologic conditions on the sit	te typical for this time of year?	Yes X N	lo (If no, explain in	n Remarks.)		
Are Vegetation, Soil, or Hydro	ology significantly distu	rbed? Are "Normal Circur	mstances" present?	res No X		
Are Vegetation, Soil, or Hydro	ology naturally problem	atic? (If needed, explain	any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach			, transects, importa	nt features, etc.		
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area				
Hydric Soil Present?		within a Wetland?	Yes No	x		
Wetland Hydrology Present?	Yes         No         X           Yes         No         X					
HYDROLOGY						
Wetland Hydrology Indicators:           Primary Indicators (minimum of one is requ           Surface Water (A1)	Aquatic Fauna (B13)		ondary Indicators (minimu Surface Soil Cracks (B6) Sparsely Vegetated Conc			
High Water Table (A2)	Marl Deposits (B15) (LF		Drainage Patterns (B10)			
Saturation (A3)	Hydrogen Sulfide Odor		Moss Trim Lines (B16)			
Water Marks (B1)	Oxidized Rhizospheres		Dry-Season Water Table	(C2)		
Sediment Deposits (B2)	Presence of Reduced Ir		Crayfish Burrows (C8)			
Drift Deposits (B3) Algal Mat or Crust (B4)	Recent Iron Reduction i Thin Muck Surface (C7)					
Iron Deposits (B5)	Other (Explain in Rema		Geomorphic Position (D2)			
Inundation Visible on Aerial Imagery (B			Shallow Aquitard (D3) FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)	')		Sphagnum Moss (D8) (LF	R T. U)		
Field Observations:				, .,		
Surface Water Present? Yes	No X Depth (inches):					
Water Table Present? Yes	No X Depth (inches):					
Saturation Present? Yes	No X Depth (inches):		ology Present?	ves No X		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, m	onitoring well, aerial photos, p	revious inspections), if availa	ble:			
Remarks:						

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

Sampling Point: WET F UP

Tree Stratum (Plot size: 30 )		tatus Dominance Test worksheet:
	78 COVEL Species ! SI	
2.		Number of Dominant Species           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 Totolo: $(\Lambda)$ (D)
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 $\leq 3.0^1$
	=Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20% of total cover:	
Herb Stratum (Plot size: 5)		
1		<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
-		more in diameter at breast height (DBH), regardless of
		height.
· · · · · · · · · · · · · · · · · · ·		
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 herbaceous (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		
Remarks: (If observed, list morphological adaptation No vegetation. Open sand adjacent to picnic area ar		
	a piyagioana.	

SOIL

	cription: (Describe 1								,	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Featur %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Re	marks
0-8	10YR 5/3	100			<u></u>		Sandy			e dry sand
8-20	10YR 5/4	100					Sandy	Coars		0% rounded quartz pebb
0.20							Gundy			
Type: C=C	oncentration, D=Depl		Reduced Matrix. N				<sup>2</sup> Location	PL=Pc	ore Lining, M	=Matrix.
	Indicators: (Applica					U.G. I.G.				ydric Soils <sup>3</sup> :
Histosol			Thin Dark S			S. T. U)			(LRR O)	<i>j</i>
	oipedon (A2)		Barrier Islan		<i>,</i> .			•	(LRR S)	
	istic (A3)		(MLRA 15		`	_/			Redox (A16)	
	en Sulfide (A4)		Loamy Mucl	•					LRA 150A)	/
_ · ·	d Layers (A5)		Loamy Gley		· / ·		•		tic (F18)	
	Bodies (A6) (LRR P,	τın	Depleted Ma		. ,				LRA 150A, 1	50B)
-	ucky Mineral (A7) (LR	-	Redox Dark				-			5(F19) (LRR P, T)
	resence (A8) (LRR U)		Depleted Da		. ,				•	ain Soils (F20)
	uck (A9) (LRR P, T)		Redox Depr		. ,			.RA 153	0 1	
	d Below Dark Surface	(411)	Marl (F10) (		(10)		•		/o/ /aterial (F21)	
	ark Surface (A12)	; (,,,,)	Depleted Oc		1) (MI P/	151)			Dark Surfac	
	rairie Redox (A16) ( <b>M</b>					-				2A in FL, 154)
	/ucky Mineral (S1) <b>(L</b>		Umbric Surf		•	, <b>,</b> ,				na Matrix (TS7)
	Bleyed Matrix (S4)	nn 0, 0,	Delta Ochric	``	, <b>.</b>					
·	Redox (S5)		Reduced Ve			(MLRA 153B, 153D) Other (Explain in Remarks)				
	Matrix (S6)		Piedmont Fl		<i>,</i> ,		-	(Explai		2)
	rface (S7) <b>(LRR P, S</b>	тт	Anomalous				-			
	ie Below Surface (S8		(MLRA 14	0	•	0013 (1 20	,	ators of	hydrophytic	vegetation and
	S, T, U)	)	Very Shallov		•	22)			drology must	-
(Entry	0, 1, 0)		(MLRA 13		`	,			urbed or prol	•
Restrictive	Layer (if observed):									
Type:										
Depth (i	nches):						Hydric Soil Pre	sent?	Yes	No X

U.S. Army Corps of Engine WETLAND DETERMINATION DATA SHEET – Atlantic a See ERDC/EL TR-10-20; the proponent age	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. Seymour, D. Healy	Section, Township, Range:				
Landform (hillside, terrace, etc.): hillslope	Local relief (concave, convex, none	e): concave Slope (%): 2			
Subregion (LRR or MLRA): LRR T Lat: 39.800263		· · · · · ·			
Soil Map Unit Name: Psammaquents, 0-2% slope, frequently floor		NWI classification: NONE			
Are climatic / hydrologic conditions on the site typical for this time c		Jo (If no, explain in Remarks.)			
Are Vegetation, Soil, or Hydrologysignificant	-	nstances" present? Yes No X			
Are Vegetation , Soil , or Hydrology naturally p		any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showin					
Solimiant of Findings – Attach site map shown		, 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: Wetland appears to receive large volumes of stormwater runoff fro					
HYDROLOGY					
Wetland Hydrology Indicators:		condary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that app	··	Surface Soil Cracks (B6)			
Surface Water (A1)Aquatic Fauna (I	· · · · · · · · · · · · · · · · · · ·	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2) Marl Deposits (B X Saturation (A3) Hydrogen Sulfide		Drainage Patterns (B10) Moss Trim Lines (B16)			
	pheres on Living Roots (C3)				
Sediment Deposits (B2) Presence of Rec	• • • • —	Crayfish Burrows (C8)			
	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	n Remarks)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)		Sphagnum Moss (D8) <b>(LRR T, U)</b>			
Field Observations:					
	inches):				
	inches): inches): 12 Wetland Hydr	ology Present? Yes X No			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial ph	notos, previous inspections), if availa	ble:			
Remarks:	and for mostly and the surrent subscription of the state	he wetlend from Ohene Deed All surfaces (			
No visible outlet to the bay. Shoreline bulkhead. Several stormwat during storms ~ no drainage basins or culverts in the vicinity.	er nowpaths on the westerly side of	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 That Are OBL, FACW, or FAC: 100.0% (A/B)
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		de goldenrod a	nd hedge bin	idweed.

SOIL

Depth	Matrix		Read	x Featu	res					
(inches)	Color (moist)	% (	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Te	xture		Remarks
0-12	10YR 5/4	100					Sa	andy		Coarse sand
12-20	10YR 5/1	100					Loam	//Clayey	fine silty	clay with about 10% rounded quartz
	ncentration, D=Dep					Grains.				e Lining, M=Matrix. blematic Hydric Soils <sup>3</sup> :
Histosol (			Thin Dark S		-	S, T, U)				) (LRR O)
Histic Epi	pedon (A2)	_	Barrier Islan							0) (LRR S)
Black His	tic (A3)	_		53B, 153	BD)			Coast	Prairie F	Redox (A16)
Hydroger	n Sulfide (A4)		Loamy Mucl	ky Miner	al (F1) <b>(L</b>	RR O)		(outs	side ML	RA 150A)
Stratified	Layers (A5)		Loamy Gley	ed Matri	x (F2)			Reduc	ed Verti	c (F18)
Organic E	Bodies (A6) <b>(LRR P</b> ,	, T, U)	X Depleted Ma	atrix (F3)	)			(outs	side ML	RA 150A, 150B)
5 cm Muc	cky Mineral (A7) <b>(LR</b>	RR P, T, U)	Redox Dark	Surface	e (F6)			Piedm	ont Floo	dplain Soils (F19) <b>(LRR P</b>
Muck Pre	sence (A8) (LRR U	)	Depleted Da	ark Surfa	ace (F7)			Anoma	alous Bri	ght Floodplain Soils (F20)
1 cm Muc	ck (A9) <b>(LRR P, T)</b>		Redox Depr	essions	(F8)			(MLF	RA 153E	3)
Depleted	Below Dark Surface	e (A11)	Marl (F10) (	LRR U)				Red Pa	arent Ma	aterial (F21)
Thick Da	rk Surface (A12)		Depleted Oc	chric (F1	1) (MLRA	151)		Very S	hallow [	Dark Surface (F22)
Coast Pra	airie Redox (A16) ( <b>N</b>	ILRA 150A)	Iron-Mangar	nese Ma	sses (F12	2) (LRR C	D, P, T)	(outs	side ML	RA 138, 152A in FL, 154)
Sandy Mu	ucky Mineral (S1) <b>(L</b>	.RR O, S)	Umbric Surf	ace (F1	3) (LRR P	, T, U)		Barrier	Islands	Low Chroma Matrix (TS7)
Sandy Gl	eyed Matrix (S4)		Delta Ochric	; (F17) <b>(</b>	MLRA 15	1)		(MLF	RA 153E	s, 153D)
Sandy Re	edox (S5)		Reduced Ve	ertic (F18	B) (MLRA	150A, 15	50B)	Other	(Explain	in Remarks)
Stripped I	Matrix (S6)		Piedmont Fl	oodplair	n Soils (F1	9) <b>(MLR</b>	A 149A)			
Dark Surf	face (S7) <b>(LRR P, S</b>	, T, U)	Anomalous	Bright F	loodplain	Soils (F2	:0)			
Polyvalue	e Below Surface (S8	)	(MLRA 14	<b>I9A</b> , 153	C, 153D)			<sup>3</sup> Indica	tors of h	ydrophytic vegetation and
(LRR S	5, T, U)	_	Very Shallov (MLRA 13						•	rology must be present, rbed or problematic.
Restrictive L Type:	ayer (if observed):									
Depth (in	ches):						Hydrid	Soil Pres	ent?	Yes X No
Remarks:										



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		



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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

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#### 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

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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.

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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 ≤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.

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/.
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- 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

Man Unit Combal	Man Unit Nama		Demonstrat AOI	
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
RIFICI	la n. Ilician
Project/Site: BL England city/county: Opper Tunsh	plCape 114 Sampling Date: 0113/22
	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.):	
	74.636846 Detum:
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.)
	Circumstances" present? Yes X No
	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 (86)
X Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
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)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4)	Crayfish 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)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	able:
Remarks:	

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ee Stratum (Plot size: 30)	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet:
		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
		Provalence Index worksheet:
		Total % Cover of: Multiply by:
	Ø = Total Cover	OBL species $\underline{qS}$ x1 = $\underline{qS}$
50% of total cover:	and the second sec	FACW species x 2 =
pling/Shrub Stratum (Plot size: 15)		FAC species x 3 =
		FACU species x 4 =
		UPL species x 5 =
		Column Totals: $95$ (A) $95$ (E) Prevalence Index = B/A = $1.0$
		Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation
		2 - Dominance Test is >50%
		$3$ - Prevalence Index is $\leq 3.0^{1}$
	= Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	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 gustralis	<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 height.
		Sapling/Shrub – Woody plants, excluding vines, les: than 3 in. DBH and greater than 3.28 ft (1 m) tall.
		Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.
4 •		
5 <del></del>		Woody vine - All woody vines greater than 3.28 ft in height.
body Vine Stratum (Plot size: 30)	20% of total cover:	
(Fict size:)		
		Hydrophytic
	= Total Cover	
50% of total cover:	20% of total cover:	Present? Yes X No
emarks: (If observed, list morphological adaptations be	elow).	

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SOIL

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)           Depth         Matrix         Redox Features           (inches)         Color (moist)         %         Type!         Loc?         Texture         Remarks	
(inches) Color (moist) % Color (moist) % Type' Loc <sup>2</sup> Texture Remarks	
0-2" 716 10YR 100 hive very light satura	rd
silf with roots	
2"-20" 411 LOYR 100 hue salvated silty	
Orcanic loam	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. 2Location: PL=Pore Lining, M=Matrix.	
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls <sup>3</sup> :	
Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) 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 1	50A B)
Image: Additional state of the state of	
Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Solls (F20)	, 9, 1)
Crganic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B)	
Thick Dark Surface (A12) iron-Manganese Masses (F12) (LRR O, P, T) <sup>3</sup> Indicators of hydrophytic vegetation ar	d
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present,	
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.	
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)	
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)	
Stripped Matrix (S6) Anomalous Bright Learny Solis (F20) (MLRA 149A, 153C, 153D)	
Dark Surface (S7) (LRR P, S, T, U)	
Restrictive Layer (if observed):	
Hydric Soil Present? Yes X	
Remarks:	
The large of light - d loop off is	
The surface layer of light-colored fine silt is presumably ended material from the upland. Doe not appear to be impeding the growth/density	
	e l
presumably ended material num The Upland, Not	ן נ
not consist be impeding the courth density	- 1
I not appear to be impearing the growing activity	6 U
file it is a firm of the second	
of the salt meadow cordgrass. Does not appear	D
be achively ending at this time.	
pe achively croating at juice	
, <u> </u>	

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region         Project/Site:       BL England       City/county Opper Twishp / Cape/Maysampling Date:       6/15/22         Applicant/Owner:       Orsted Wind       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, trefvsc 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         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 Rill 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):

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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 SCONGAG 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

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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>	Texture Remarks
0-8" 3/4 10YR 100		Coarse mixed hill with cual
7		chunks and cinders,
······		
		sand tsilt with 2090
		nounded quartz peobles
8'-20" 513 104R 100		mixed hill with
·		chunks of coal, dryo
	Reduced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soli Indicators: (Applicable to all		indicators for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, U	
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)		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)	Depleted Ochric (F11) (MLRA 151)	
Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A	Iron-Manganese Masses (F12) (LRR O, P,	
Sandy Mucky Mineral (S1) (LRR O, S)	· · · · · · · · · · · · · · · · ·	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Redox (S5)	Reduced Vertic (F18) (MLRA 150A, 150B) Pledmont Floodplain Solls (F19) (MLRA 14)	0.6)
		•
Stripped Matrix (S6)	Anomalous Bright Loamy Solis (F20) (MLR/	•
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)	Anomalous Bright Loamy Solls (F20) (MLR/	•
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed):	Anomalous Bright Loamy Solis (F20) (MLR/	•
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type:	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): Type: Depth (Inches):	Anomalous Bright Loamy Solls (F20) (MLR/	•
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 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 Soli Present? Yes No
Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (Inches):	Anomalous Bright Loamy Solis (F20) (MLR/	A 149A, 153C, 153D) 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 Soli Present? Yes No
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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 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 Soli Present? Yes No

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# Attachment D. Letter of Interpretation (LOI)



# State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAR 1 9 2019

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

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)

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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		
Are VegetationSoilor Hydrologysignificant	tly disturbed? Are "Normal C	Circumstances"present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally p		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	within a Wetland?	Yes X NO POPULATION NO POPULATICON NO POPULATICON NO POPULATICON NO POPULATICON NO POPULATICON POPUL
west toward Barnegat Bay HYDROLOGY		
Wetland Hydrology Indicators: Primary Indicators fmininluic of one is required: check all that apply	—	econdary Indicators I minimum of two required} Surface Spit Cracks (B6)
X Surface Water (A1) Aqua(ie Fauna (i		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Mart Deposits (B	,	Drainage Patterns (B10)
X Saturation (A3) Hydrogen Sulfide		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		Crayfish Burrows (CB)
	uction in Tilled Soils (C6)	Saturation Visible an Aerial Imagery (Cg)
Algal Mat or Crust (B4) Thin Muck Surfa Iron Deposits (B5) Other (Explain in		Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Inundation Visible on Aerial Imagery (B7)	Remarks)	Shallow Aquitard (D3) 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_X_ No Depth (indices).           Water Table Present?         Yes_X_ No Depth (indices).		
Present?         Yes X         No         Depth (in	nches): <u>1"</u> (includes Wetlan	d Hydrology Present? Yes_X_No
capillary fringe) Describe Recorded Data tstream gauge. monitoring well, aerial p	hotos, previous inspections), if ava	ailable.
Remarks:		
Water filled soil pit to within 1" of ground surfa	ace. Shallow ponded areas	within wetlands are present. Verv
heavy rainfall (~1") in prior 24 hrs.		

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

		Sa	n

	Absolute	e Domina	ant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u>			<u>es+</u> Status	Number of Deminent Creation
1. Acer rubrum	40	Y	FAC 2.	That Are OBL, FACW, or FAC:(A)
			3	Total Number of Dominant
			4.	Species Across All Strata:5 (B)
				Percent of Dominant Species 80 That Are OBL, FACW, or FAC: (A/B)
				Pre valenc e Index worksheet:
7		_		Total % Cover of Multiply by
7				OBL species x1=
8	40	- T-4-1		FACW species <u>100</u> <u>x</u> 2 = <u>200</u>
				FAC species $\frac{70}{x^3} = \frac{210}{210}$
50% oftotal cover:	20%0	i total cov	/er:	FACU species $20 \times 4 = 80$
Saplin q/Shrub Stratum (Plot size: 15ft				UPL species         20         x 4 -         80           UPL species         x 5 =
1. Vaccinium corymbosum			FACW 2.	
			3	Column Totals: <u>190</u> (A) <u>490</u> (B)
			4	Prevalence Index =B/A = 2.58
			5	Hydrophytic Vegetation Indicators:
	<u></u>	<u> </u>		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% o	f total cov	ver:	Indicators of hydric soil and wetland hydrology must
Herb Stratum (Plot size: <u>5 ft</u> )				be present, unless disturbed or problematic.
1. Phragmites australis	40	Y	FACW 2	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.
			9	Westwise Allowed wines methods a 200 ft in
				Woody vine — All woody vines greater than 3.28 ft in height.
11			12.	
	_40	= Total	Cover	
50% oftotal cover:	20% o	f total cov	/er:	
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>				
1. Smilax rodundifolia	<u>    30 Y</u> F	AC		
2. <u>Lonicera japonica</u>	20	Y	_ F <u>ACU</u> з.	
		4.		
				l budes e budés
5.		_		Hydrophytic Vegetation
	50	=Tota	al Cover	Present? Yes X No
50% of total cover:	20% o	f total cov	ver:	
Remarks: (If observed, list morphological adaptation	s b <del>elow).</del>	-		
multi-trunked red maples; buttressed surface	ne roots o	n red m	anles	
man-uunikou rou mapies, bulliesseu suna		n iou li	apico	

WLE-WL

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

(inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	dox Feature %	Type'	Loc	Texture	Remarks
0-4"	3/1 10YR	100					fine sand	Moist organic loam
4-11"	4/2 10YR	100					sand	Silty sand
11-20"	6/2 10YR	90	_6/4 10YR	10	RM		sand	Silty sand
Hydric Soil Histosol Histic E Black H Hydroge Stratifie Organic 5 cm Mu Muck Pr 1 cm Mu Deplete Thick D Coast P Sandy M Sandy M Sandy C Sandy F Strippec Dark Su Restrictive Type:	Indicators: (Applic	able to a P, T, U) .RR P, T, J) (LRR 0, (LRR 0, c, S, T, U :	Thin Dark Loamy Mi Loamy Gi X Depleted M Redox Da Redox Da Redox Da Mart (F10 Depleted Iron-Mang S) Delta Och Reduced Piedmont Anomalou J)	erwise not Below Sur Surface (5 ucky Miner eyed Matrix Matrix (F3) urk Surface Dark Surface pressions ( ) (LRR U) Ochric (F1 ganese Mas urface (F13 ric (F17) (M Vertic (F1 t Floodplain is Bright Lo	ted.) face (58) (I 59) (LRR S al (F1) (LR (F2) (F6) ce (F7) F8) 11) (M LR sses (F12) ) (LRR P, 1 1LRA 151) 8) (MLRA n Soils (F	LRR S, T, , T, U) (R0) (LRR 0, F (, U) 1SOA, 1 19) (M LF	Indicators f U) 1 cm M 2 cm M Reduce Piedmo Anoma (MLF Red Pa Very S Other (E P, T) 'Indica wett unle 50B) RA 149A, 153C, 7	PL=Pore Lining, M=Matrix. or Problematic Hydric Soils': luck (A9) (LRR 0) luck (A10) (LRR S) ed Vertic (F18) (outside MLRA 1SOA,B) int Floodplain Soils (F19) (LRR P, S, T) lous Bright Loamy Soils (F20) &A 153B) arent Material (TF2) hallow Dark Surface (TF12) Explain in Remarks) itors of hydrophilic vegetation and and hydrology must be present, ss disturbed or problematic. 153D) Present? Yes X_No

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> o		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, 0-10</u>	Local relief (c Lat!39.850693	oncave, convex.none)	<u>: Level</u> )88175		Datum:	(%): <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	significantly disturbed? naturally problematic?	Are "Normal Circu (If needed. explain	mstances" n any answ	present? Yes ers in Remark	s.)	
Hydrophytic Vegetation Present?     Yes       Soil Present?     Yes       Wetland Hydrology Present?     Yes       Remarks!     Yes	No X	e Sampled Area n 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.		<b>≚</b>	
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 Roots	s(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 (C6)		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 (incl	nes):		
Saturation Present? (includes capillary fringe)	Yes No $X$ Depth (ind	ches): We	etland Hy	drology Present? YesNo_X
Describe Recorded Data tstr	eam gauge. monitoring w	vell, aerial photos, previous inspection	ns), if ava	ilable.

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	Absolut % Cove	er Snecies	+ Status	Dominance Test worksheet:
1. Juniperus virginiana	60	2002	FACU	Number of Dominant Species 3 (A)
2. Prunus serotina	20	Y	FACU	That Are OBL, FACW, or FAC:3 (A)
or the second seco				Species Across All Strata:6(B)
3				Percent of Dominant Species
				50
5				That Are OBL, FACW, or FAC: (A/B)
7				Pre valenc e Index worksheet:
8.			-	Total % Cover of Multiply by
	80	= Total Co	ver	OBL species x 1 =10
50% oftotal cover:	201			FACW species x 2 =
Saplin o/Shrub Stratum (Plot size: 15 ft )	20% 0	totalcove	s	FAC species 45 x 3 = 135
1. Vaccinium corymbosum	20	Y	FACW	FACU species 100 x4 = 400
000000000000000000000000000000000000000				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	= Total Co	ver	Problematic Hydrophilic Vegetation' Explain)
50% oftotal cover:				Problematic Hydrophilic Vegetation' Explain)
50% oftotal cover:	20% c	oftotalcove		
50% oftotal cover:	20% c	oftotalcove		Problematic Hydrophilic Vegetation' Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% oftotal cover:	20% d	of total cove	r	Indicators of hydric soil and wetland hydrology must
50% oftotal cover:	20% c	FACW	r	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
50% oftotal cover:	20% c	FACW	r	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
50% oftotal cover:	20% c	FACW	r	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
50% oftotal cover:	20% c	FACW	r:	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:	20% d	FACW	r:	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% c	FACW	r:	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.
50% oftotal cover:	20% c	FACW	r:	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
50% oftotal cover:	20% c	FACW	r	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.
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50% oftotal cover:		FACW	r	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
50% oftotal cover:	 	FACW	r	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
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50% oftotal cover:	 35 Y !       	FACW	r:	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
50% oftotal cover:	 35 Y !       	FACW	r	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
50% oftotal cover:	 	FACW	r:	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
50% oftotal cover:	 35 Y !       	FACW	r:	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
50% oftotal cover:		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. (7.8 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:		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 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

inches)       Color (moist)       %       Type'       Loc       Texture       Remarks         0"-8"       4/2 10YR       100       fine sand sandy loam       sand       sand       sand         8"-15"       4/2 10YR       100       sand       sand       sand       gand       sand         15"-20"       4/2 10YR       100       sand       silty sand with 20% rounded quartz pebbles       guartz pebbles	Profile Descri Depth	ption: (Describe Matrix			cument th dox Featu		or confiri	m the absence of indicators.)
0"-8"       4/2 10YR       100       fine sand sandy loam         8"-15"       4/2 10YR       100       sand       sand         15"-20"       4/2 10YR       100       sand       silty sand with 20% rounded quartz pebbles							Loc	Texture Remarks
8"-15"       4/2 10YR       100       sand       sand         15"-20"       4/2 10YR       100       sand       silty sand with 20% rounded quartz pebbles	0"-8" 4	/2 10YR	100					fine sand sandy loam
15"-20"       4/2 10YR       100       sand       silty sand with 20% rounded quartz pebbles         ype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       'Location: PL=Pore Lining, M=Matrix.         ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils':         Histosol (A1)       Polyvalue Below Surface (58) (LRR S, T, U)       1 cm Muck (A9) (LRR O)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRRO)       Reduced Vertic (F18) (outside MLRA 1SOA, Hydrogen Sulfide (A4)         Stratified Layers (A5)       Depleted Matrix (F2)       Piedmont Floodplain Soils (F19) (LRR P, S, T, U)         Nuck PMineral (A7) (LRR P, T, U)       Redox Depressions (F8)       Very Shallow Dark Surface (T7)         Nuck (A9) (LRR P, T, U)       Redox Depressions (F8)       Very Shallow Dark Surface (T12)         1 cm Muck (A9) (LRR P, T, U)       Redox Depressions (F8)       Very Shallow Dark Surface (T12)         1 cm Muck (A9) (LRR P, T)       Mart (F10) (LRR U)       Very Shallow Dark Surface (T12)         1 cm Muck (A9) (LRR P, T)       Mart (F10) (LRR U)       Very Shallow Dark Surface (T12)         1 cm Muck (A9) (LRR P, S, Marge ed (A11)       Depleted Ochric (F13) (LRR P, T, U)       wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1) (LRR 0, S)       Delta Ochric (F13) (LRR P, T, U)       wetland hydrolo								-
implementation       implementation         implementation       implementa								
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators 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)       Reduced Vertic (F18) (outside MLRA 1SOA,         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19) (LRR P, S,         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 (A9) (LRR P, T)       Mart (F10) (LRR U)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Iron-Manganese Masses (F12) (LRR 0, P, T)       Indicators of hydrophilic vegetation and         Muck Y Mineral (S1) (LRR 0, S)       Delta Ochric (F11) (MLRA 150)       Indicators of hydrophilic vegetation and         Sandy Mucky Mineral (S1)       Reduced Vertic (F18) (MLRA 150B)       Piedmont Floodplain Soils (F19) (M LRA 149A)         Sandy Reved (S5)       Piedmont Floodplain Soils (F19) (M LRA 149A)       Nomalous Bright Loamy Soils (F20) (MLRA 149A), 153C, 153D)         Sandy Reved (S7)       Indicators of Notophilic vegetation and       Wetric Soil Present? Yes No X		4/2 10YR						
Dark Surface (57) (LRR P, S, T, U)         estrictive Layer (if observed):         Type:	Tydric Soil In Histosol ( <i>I</i> Histic Epip Black Hist Hydrogen Stratified I Organic B 5 cm Mucl Muck Pres 1 cm Mucl Depleted I Thick Dar Coast Prai Sandy Mu Sandy Gle Sandy Re	dicators: (Appli A1) bedon (A2) ic (A3) Sulfide (A4) Layers (A5) bodies (A6) (LRF ky Mineral (A7) ( sence (A8) (LRR P, T Below Dark Surfa k Surface (A12) irie Redox (A16) icky Mineral (S1 byed Matrix (54) dox (55)	Cable to all L RP, T, U) (LRR P, T, U) U) T) ace (A11) (MLRA 1SOA	RRs, unless oth Polyvalue Thin Dark Loamy M Loamy Gl Depleted Redox Da Depleted Redox De Mart (F10 Depleted Iron-Mang A) Umbric So Delta Och Reduced Piedmon	Below Su Surface ( ucky Mine eyed Matri Matrix (F3 pressions Dark Surface Dark Surface Dark Surface (F1 ganese Ma urface (F1 ric (F17) ( Vertic (F	Deted.) Inface (58) ( (59) (LRR S Pral (F1) (LF ix (F2) ) e (F6) ace (F7) (F8) F11) (M LR asses (F12) 3) (LRR P, <sup>-</sup> MLRA 151) 18) (MLRA in Soils (F	LRR S, T, , T, U) (R0) (LRR 0, F (, U) 1SOA, 1 19) (M LF	Indicators for Problematic Hydric Soils': ,U) 1 cm Muck (A9) (LRR 0) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA1SOA, Piedmont Floodplain Soils (F19) (LRR P, S, Anomalous Bright Loamy Soils (F20) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) P, T) 'Indicators of hydrophilic vegetation and wetland hydrology must be present, unless disturbed or problematic. 50B) RA 149A)
emarks:	Dark Surf Restrictive La Type: Depth (inch	ace (57) (LRR yer (if observed	P, S, T, U) <sup>d):</sup> none ot		is Bright Lo	oamy Soils	(F20) (ML	

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 Sect	
Landform (hillslope, terrace, etc.). <u>level</u> Loca Subregion (LRR or MLRA). <u>LRR T</u> Lat! <u>39.849</u>	
Are climatic hydrologic conditions on the site typical for this time of year Are VegetationSoilor Hydrologysignificantly dist Are Vegetation, Soil, or Hydrologynaturally probler	? Yes_X No(If no, explain in Remarks.) urbed? Are "Normal Circumstances" present? YesNo_X
SUMMARY OF FINDINGS — Attach site map showing sar         Hydrophytic Vegetation Present?       Yes X       Na         Hydric Soil Present?       Yes X       No         Wetland Hydrology Present?       Yes X       No	npling point locations, transects, important features, etc.          Is the Sampled Area         within a Wetland?    Yes X_NO
Remarks! Wetland is influenced by sheet flow runoff from ad	jacent 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 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)
X Water-Stained Leaves (B9)		Sphag num moss (D8) (LRR 7, U)
Field Observations:		
Surface Water Present? Yes_ No_X	Depth (inches):	
	Depth (inches): <b>4"</b> Saturation	
Present? Yes X No capillary fringe)	Depth (inches):4" (includes Wetland	Hydrology Present? YesX No
Describe Recorded Data tstream gauge. mon	itoring 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.

	Absolut	e Domina	ant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>			es+ Status	Number of Deminent One size
1				That Are OBL, FACW, or FAC:(A)
2				Total Number of Dominant
3				Species Across All Strata:(B)
4				Percent of Dominant Species 100
5				Percent of Dominant Species 100 That Are OBL, FACW, or FAC: (A/B)
				Pre valenc e Index worksheet:
7				Total % Cover of Multiply by
8.				
0	0	- T-4-1		OBL speciesx 1= FACW speciesx 2 = 240
				FACW species $\frac{120}{20}$ x $2 = \frac{240}{60}$
50% oftotal cover:	20% c	of total cov	/er:	FAC species 20x 3 = 60
<u>Saplin q/Shrub Stratum</u> (Plot size <u>: 15 ft</u>				FACU species x 4 = UPL
1. Vaccinum corymbosum	60	Υ	F <u>ACW</u> 2	species x 5 =
· ·			3	Column Totals: <u>140</u> (A) <u>300</u> (B)
				Prevalence Index = B/A = <u>2.14</u>
			5	Hydrophytic Vegetation Indicators:
			6	1 - Rapid Test for Hydrophilic Vegetation
				X 2-Dominance Test is >50%
8				X 3 - Prevalence Index is fi3.0'
0		= Total		Problematic Hydrophilic Vegetation' Explain)
50% of total cover:	20% c	of total cov	/er:	Indicators of hydric soil and wetland hydrology must be
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
1. Phragmites australis	60	Y	FACW 2.	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.
4				
5				Sapling/Shrub — Woody plants, excluding vines, less
6				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
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 height
10				height.
11				
12				
	60	_= Total	Cover	
50% oftotal cover	20%	of total cov	/er:	
Woody Vine Stratum (Plot size: 30 ft				
	00	V		
1. Smilax rotundifolia	20	<u> </u>	F <u>AC</u> 2	
			3	
				Hydrophytic
4				Vegetation
5.		-		Present? Yes <u>X</u> No
···	20	= Total	Cover	
50% of total cover: Remarks: (If observed, list morphological adaptations		of total cov	/er:	
Remarks. (il observed, list morphological adaptations	below).			

Depth	Matrix	-	dox Featu				e of indicators.)
(inches) Color (moi	st <u>)</u> %	Color (moist)	%	Type'	Loc	Texture	Remarks
0"-3" 2/1 10	YR 100						organic loam
3"-20" 6/1 10	<u>′R 100</u>						sand with organic steaking
Type: C=Concentration Type: C=Concentration Tydric Soil Indicators Histosol (A1) Histic Epipedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A Organic Bodies (A 5 cm Mucky Mine Muck Presence (A 1 cm Muck (A9) (I Depleted Below D Thick Dark Surfac Coast Prairie Redo Sandy Mucky Mir Sandy Gleyed Ma Sandy Redox (55 Stripped Matrix (5 Dark Surface (57 Restrictive Layer (If o	(A4) (A4) (A4) (A4) (A5) (A4) (A7) (LRR P, T, U) (A4) (A7) (LRR P, T, U) (A1) (LRR U) (A12) (A12) (A16) (MLRA 15) (A16) (MLRA 15) (A17) (MLRA 15	all LRRs, unless oth Polyvalue Thin Dark Loamy M Loamy Gl X Depleted I Redox Da Redox Da (U) Depleted Iron-Man SOA) Umbric Si S) Delta Och Reduced Piedmon Anomalou	erwise n Below Si Surface ucky Mine eyed Mati Matrix (F Dark Surfac Dark Surfac Dark Surf pressions (LRR U Ochric (I ganese M urface (F1 ric (F17) ( Vertic (F1 t Floodpla	oted.) urface (58) ( (59) (LRR S eral (F1) (LF rix (F2) b) e (F6) acce (F7) b (F8) ) F11) (M LR asses (F12 3) (LRR P, [MLRA 151] 18) (MLRA ain Soils (F	LRR S, <sup>*</sup> S, T, U) RR0) (LRR 0 1, U) (LRR 0 T, U) 1 1SOA, 19) (M I	Indicator T, U) 1 cm 2 cm Redu Pieda Anor (M Red Very Othe Very Othe 150B) RA 149A, 1530	n: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils': n Muck (A9) (LRR 0) n Muck (A10) (LRR S) uced Vertic (F18) (outside MLRA 1SOA, B) mont Floodplain Soils (F19) (LRR P, S, T) malous Bright Loamy Soils (F20) LRA 153B) Parent Material (TF2) ' Shallow Dark Surface (TF12) r (Explain in Remarks) icators of hydrophilic vegetation and etland hydrology must be present, nless disturbed or problematic.

Project/Site. <u>Island Beach State Park</u>	City/County.	<u>Seaside</u>	Park,	Ocean	Sampling	Date!	04/06/2022
ApplicanVOwner: Orsted Ocean Wind, LLC			State:		Sampling		WLF-UPL
Investigator(s)! <u>Steve Seymour, James Eberhardt</u>	Soction Tow	nchin Pango:			Sampling	r ont	
Landform (hillslope, terrace, etc.). level						Slope	(9/.). 0
	•		,				. ,
- · · · · · · · · · · · · · · · · · · ·	39.849083	-					m: <u>VVGS64</u>
Soil Map Unit Name. Hooksan fine sand, 2-10% slop						<u>e</u> Are	climatio
hydrologic conditions on the site typical for this time of year?	Yes <u>X</u> No				-		
Are VegetationSoilor Hydrologysign	ificantly disturbed?	Are "No	rmal Circ	umstances	s" present? א	∕es <u>X</u>	No
Are Vegetation, Soil, or Hydrologynatu	arally problematic?	(If neede	ed. explain	n any answ	ers in Remar	ks.)	
SUMMARY OF FINDINGS — Attach site map sh	owing sampling į	point locatio	ons, tra	nsects, i	mportant	feature	es, etc.
Hydrophytic Vegetation Present? YesNa_X	Hydric						
Soil Present? YesNo_	X	e Sampled Are			V		
Wetland Hydrology Present? YesNo_X		n a Wetland?		Yes	NO_X		-
Remarks!	I						
HYDROLOGY							
Wetland Hydrology Indicators:			Soci	ondon/ Ind	icators Imini	mumof	two required}
Primary Indicators fmininluic of one is required: check all that	t apply)				oit Cracks (B		worequired
Surface Water (A1) Aqua(ie Fa					•	,	Surface (B8)
	sits (B15) (LRR U)			Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)			Burlace (DO)
	Sulfide Odor (C1)			Moss Trim Lines (B16)			
	Rhizospheres along Li	iving Roots (C	3)	Dry—Seas	on Water Tab	ole(C2)	
Sediment Deposits (B2) Presence	of Reduced Iron tC4)			Crayfish B	urrows (CB)		
	n Reduction in Tilled	Soils (C6)			Visible an Ae	-	gery (Cg)
	Surface (C7)				ic Position (	D2)	
	olain in Remarks)				uitard (D3) al Test (D5)		
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)					n moss (D8) (	I RR 7	U)
Field Observations:					111033 (20) (		
Surface Water Present? YesNo_XDepth (	(inches):						
Water Table Present? YesNo_XDepth (							
	(inches):		nd Hydro	ology Pres	ent? Yes_		No_X
(includes capillary fringe) Describe Recorded Data tstream gauge. monitoring well, au	orial photos, proviour		if ovoilo	blo			
Describe Recorded Data Istream gauge. monitoring weil, at	enal priotos, previous	s inspections)	, li avallal	Die.			
Remarks:							
very heavy rainfall (~1") in prior 24 hou	rs						

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

) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )			ant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u>			es+ <u>Status</u>	Number of Dominant Species
1. <u>liex opaca</u>	30	<u> </u>	F <u>ACU</u> 2.	That Are OBL, FACW, or FAC: 0 (A)
			3	Total Number of Dominant 5
			4	Total Number of Dominant 5 Species AcrossAll Strata: (B)
			5	Percent of Dominant Species 0
				- That Are OBL, FACW, or FAC:(A/B)
7				Pre valenc e Index worksheet:
8				Total % Cover of Multiply by
0		= Total (	Cover	OBL speciesx1=
				FACW species x 2 =
50% oftotal cover: Saplin g/Shrub Stratum (Plot size: <u>15 ft</u>	20%	or lotal cov	er	FAC species x 3 =
	10	V	וחו	FACU species $40   x 4 = 160$
1. Prunus maritima	10			UPL species $45$ x 5 = $225$
2. Yucca glauca	10	Y	UPL	Column Totals: $\underline{85}$ (A) $\underline{385}$ (B)
<ol> <li><u>Hudsonia tomentosa</u></li> </ol>	25	Y	UPL	Column Totals: -05 (A) -000 (B)
4				Prevalence Index = $B/A = -4.53$
5				
6				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophilic Vegetation
7				2 - Dominance Test is>50%
8				3 - Prevalence Index is fi3.0'
		_= Total (		Problematic Hydrophilic Vegetation' Explain)
50% of total cover:	20%	of total cov	er:	4
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				Indicators of hydric soil and wetland hydrology must
1. Taraxacum officinale	_1 <u>0</u>	_ Y	F <u>ACU</u>	be present, unless disturbed or problematic.
2				Definitions of Four Vegetation Strata:
3				
4				Tree — Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
5				height.
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
8				of size, and woody plants less than 3.28 ft tall.
9				Woody vine — All woody vines greater than 3.28 ft in
10	<u> </u>			height.
11				4
12				
	10	_= Total (	Cover	
50% oftotal cover:	20%	of total cov	er:	
<u>Woody Vine Stratum</u> (Plot size <u>: 30 ft</u>				
1				
2				
3				4
4				Hydrophytic
5				Vegetation
	0	_= Total (	Cover	Present? Yes No <u>X</u>
50% of total cover:		of total cov	er:	
Remarks: (If observed, list morphological adaptations	s below).			
substrate in vicinity is 60% bare/u	nvedeta	ted sand	4	
			-	

	Matrix Color (moist)	% Colo	r (moist)	x Features % 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)	
	pipedon (A2)			urface (59) (LRR			/luck (A10)		
	istic (A3)			ky Mineral (F1) (L	RR0)				e MLRA 1SOA, B)
	en Sulfide (A4)			ed Matrix (F2)					-19) (LRR P, S, T)
	d Layers (A5) c Bodies (A6) (LRF		Depleted Ma	strix (F3) Surface (F6)			alous Brigh	t Loamy s	Solis(F20)
	ucky Mineral (A7)			ark Surface (F7)			RA 153B) arent Mate	rial (TF2)	
	resence (A8) (LRR			essions (F8)			hallow Dar		
	uck (A9) (LRR P, 1		Mart(F10)(	· · ·		•	Explain in R		()
	d Below Dark Surf			chric (F11) (M LF	RA151)	,	·	,	
	ark Surface (A12)			nese Masses (F12	, <b>·</b> ·	. ,			egetation and
	rairie Redox (A16)			ace (F13) (LRR P,					be present,
	Mucky Mineral (S1			(F17) (MLRA 151			ess disturbe	ed or prob	lematic.
	Gleyed Matrix (54) Redox (55)			ertic (F18) (MLR/ loodplain Soils (F					
-	d Matrix (56)			Bright Loamy Soils			153D)		
	urface (57) (LRR	P. S. T. U)	Anomalous	Bright Loanty Cons	(1 20) (MEI	1000,	1000)		
Restrictive	Layer (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:	,								

WETLAND DETERMINATION DATA	FORM — Atlantic and	d Gulf Coastal Plain Region
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Project/Site. Island Beach State Park	City/County.	Seaside Park	<u>k, Ocean</u>	_Sampling Da	ate! 04	/06/2022
ApplicanVOwner: <u>Orsted Ocean Wind, LLC</u> Investigator(s)! <u>Steve Seymour, James Eberhardt</u>		SiSi nship, Range: <u>_Se</u>		Sampling	Point:	WLG-WL
Landform (hillslope, terrace, etc.). <u>level</u> Subregion (LRR or MLRA). <u>LRR T</u> Lat! <u>C</u>	•		,		•	(%): <u>0</u> <u>WGS84</u>
,		•				
Soil Map Unit Name. <u>Hooksan fine sand, 2-10% slope</u> hydrologic conditions on the site typical for this time of year? Ye					Are Are	climatic
Are VegetationSoilor Hydrology Xsignifica				-		x X
Are VegetationSoilor Hydrologysignificationsoil, or Hydrologynatural	-		Circumstances' xplain any ans			_ NO <u>_                                 </u>
SUMMARY OF FINDINGS — Attach site map show	ing sampling	point locations,	transects, i	mportant fe	eatures	, etc.
Hydrophytic Vegetation Present?       Yes X Na         Hydric Soil Present?       Yes X No         Wetland Hydrology Present?       Yes X No         Remarks!       Yes X No		e Sampled Area n a Wetland?	Yes	<u>Х</u> NO		
Wetland hydrology significantly affected b paved parking lot into the northeast. Flow						
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Ind			o required}
Primary Indicators fmininluic of one is required: check all that ap			-	oit Cracks (B6		
Surface Water (A1) Aqua(ie Fauna	. ,			/egetated Col	ncave Su	Irface (B8)
High Water Table (A2) Mart Deposits			-	atterns (B10)		
Saturation (A3) Hydrogen Sulfi		· ·		Lines (B16)	(00)	
	ospheres along L		-	on Water Table	e(C2)	
	Reduced Iron tC4)		,	urrows (CB)		
	eduction in Tilled	Soils (C6)		Visible an Aeri	-	y (Cg)
Algal Mat or Crust (B4) Thin Muck Sur	. ,		•	ic Position (D	02)	
Iron Deposits (B5) Other (Explain	n in Remarks)			uitard (D3)		
Inundation Visible on Aerial Imagery (B7)				al Test (D5)		
Water-Stained Leaves (B9)			Sphag num	n moss (D8) (L	.RR 7, U)	
Field Observations:						
Surface Water Present? Yes_ No_X_ Depth (inches):						
Water Table Present? Yes X NoDepth (inch						
Present? Yes X No Depth (incl capillary fringe)	hes): <u>12"</u> (inc	ludes Wetland H	ydrology Pres	ent? Yes <u>)</u>	<u>Х</u> No	
Describe Recorded Data tstream gauge. monitoring well, aeria	l 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> 1	<u>% Cove</u>	er Specie	nt Indicator s+ <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2				Total Number of Dominant Species Across All Strata:4(B)
4				
5				Percent of Dominant Species 100 That Are OBL, FACW, or FAC:(A/B)
				Pre valenc e index worksheet:
7				
8				<u>Total % Cover of Multiply by</u> OBL species <u>5</u> x 1 = 5
		= Total C		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	-			FACU species x 4 =
1. <u>Rosa palustris</u>				UPL species        x 5 =
2. Vaccinium corymbosum				Column Totals: <u>115</u> (A) <u>215</u> (B)
3				
4				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				X 3-Prevalence Index is fi3.0'
		= Total C		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
				height.
6				Sapling/Shrub — Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
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
11.				height.
12.				
	90	= Total C	over	
50% oftotal cover:		ftotal cove		
Woody Vine Stratum (Plot size: 30				
1. Smilax rotundifolia	10	Y	FAC 2.	
			3.	
			4.	
			5.	
				Hydrophytic Vegetation
	10 =	Total Co	ver	Present? Yes X No
50% of total cover:	20% of total cover:			
Remarks: (If observed, list morphological adaptations	s below).			

Depth <u>Matrix</u> (inches) Color (moist)			Features 6 Type'	Loc	Texture	Remarks
0-1" 3/1 10YR	100					shallow organic loam
1"-20" 6/1 10YR	100			<u> </u>		sand with organic streaking
Type: C=Concentration, D=De lydric Soil Indicators: (Appli Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LRF 5 cm Mucky Mineral (A7) Muck Presence (A8) (LRR P, <sup>-</sup> ) Depleted Below Dark Surf 1 cm Muck (A9) (LRR P, <sup>-</sup> ) Depleted Below Dark Surf Thick Dark Surface (A12) Coast Prairie Redox (A16) Sandy Mucky Mineral (S <sup>-</sup> ) Sandy Gleyed Matrix (54) Sandy Redox (55) Stripped Matrix (56)	Cable to all LRF RP, T, U) (LRR P, T, U) RU) ace (A11) (MLRA 1SOA) 1) (LRR 0, S)	<ul> <li>Rs, unless otherw Polyvalue Bela Thin Dark Sur Loamy Mucky Loamy Gleyed</li> <li>X Depleted Matr Redox Dark Su Depleted Dark Redox Depres Mart (F10) (LF Depleted Och Iron-Mangane Umbric Surfac Delta Ochric (F Reduced Ver Piedmont Flo</li> </ul>	ise noted.) bw Surface (58) ( face (59) (LRR S Mineral (F1) (LF Matrix (F2) ix (F3) urface (F6) Surface (F7) sions (F8)	LRR S, T, S, T, U) RR0) (LRR 0, (LRR 0, T, U) (1SOA, 1 19) (M LI	Indicators (U) 1 cm 2 cm Reduc Piedm Anom (ML Red F Very Other P, T) 'Indic we un 50B) RA 149A)	: PL=Pore Lining, M=Matrix. 5 for Problematic Hydric Soils': Muck (A9) (LRR 0) Muck (A10) (LRR S) ced Vertic (F18) (outside MLRA 1SOA, B nont Floodplain Soils (F19) (LRR P, S, T nalous Bright Loamy Soils (F20) .RA 153B) Parent Material (TF2) Shallow Dark Surface (TF12) (Explain in Remarks) cators of hydrophilic vegetation and etland hydrology must be present, less disturbed or problematic. 5, 153D)
Dark Surface (57) (LRR Restrictive Layer (if observe Type:	<sup>a):</sup> none ob	-				~
Depth (inches): Remarks:		_			Hydric Soi	I Present? Yes X No

Joland Daach State Dark		- · ·			0	4/00/0000	
	City/C	ounty. <u>Seaside</u>				4/06/2022	
ApplicanVOwner: Orsted OceanWind, LL			State:NJ		Point:	WLG-UPL	
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	(%):0	
Subregion (LRR or MLRA). LRR T	Lat! 39.8482	246 Lond	-74.08834	15	Datum:	WGS84	
Soil Map Unit Name. Hooksan fine sand, 2			, ,	fication. <u>no</u>	ne		
Are climatic hydrologic conditions on the site typ		Yes X No					
Are VegetationSoilor Hydrology_	-		ormal Circumstance	-	voc X	No	
						(WE)	
Are Vegetation, Soil, or Hydrology_	naturally problema	atic? (If neede	ed. explain any ans	vers in Remari	ks.)		
SUMMARY OF FINDINGS - Attach site	e map showing sam	pling point locati	ons, transects,	important f	features	, etc.	
Hydrophytic Vegetation Present?       Yes_         Soil Present?       Yes_         Wetland Hydrology Present?       Yes_         Remarks!       Yes_		Is the Sampled Ar within a Wetland?		<u>NO_X</u>			
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary In	dicators Iminii	mum of tw	o required}	
Primary Indicators fmininluic of one is required: of	Surface S	Spit Cracks (B6	6)				
Surface Water (A1)	Aqua(ie Fauna (B13)		Sparsely	Sparsely Vegetated Concave Surface(B8)			
High Water Table (A2)	Mart Deposits (B15) (LRR U)			Patterns (B10)	)		
Saturation (A3)	Hydrogen Sulfide Odor (	C1)	Moss Trin	Moss Trim Lines (B16)			
Water Marks (B1)	Oxidized Rhizospheres	along Living Roots (C	C3) Dry—Sea	son Water Tab	le(C2)		
Sediment Deposits (B2)	Presence of Reduced Ire	on 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 (Plot size: <u>30 ft</u> )			hant Indicator	Dominance Test worksheet:
	-		<u>cies+</u> Status	Number of Dominant Species
1. <u>Juniperus virginiana</u>			FACU	That Are OBL, FACW, or FAC: 1 (A)
2				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 Índex 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 q/Shrub Stratum (Plot size: 15 ft )				FAC species x 3 =
1. Vaccinium corymbosum	20 Y	FACW		FACU species <u>60</u> x 4 = <u>240</u>
2. Myrica pennsylvania		Y	<u>UPL</u> 3.	UPL species
		_		Column Totals: <u>150 (</u> A) <u>630 (</u> B)
				Prevalence Index = B/A = <u>4.2</u>
				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'
		_= Tota		Problematic Hydrophilic Vegetation' Explain)
50% of total cover:	20%	of total co	over:	-
Herb Stratum (Plot size: <u>5 ft</u> )				Indicators of hydric soil and wetland hydrology must
1. Ammophila breviligulata	<u>40 Y L</u>	JPL		be present, unless disturbed or problematic.
2				Definitions of Four Vegetation Strata:
3				
4				Tree — Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
5				height.
6				
7				<ul> <li>Sapling/Shrub — Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</li> </ul>
8				Herb — All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9				of size, and woody plants less than 5.26 it tall.
				Woody vine — All woody vines greater than 3.28 ft in
10				height.
10				-
12	40			+
	40	_= Tota	-	
50% of total 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:		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	
	<u>r (moist) % Type' Loc Text</u> i	
<u>0"-20"</u> <u>6/1 10YR 100</u>	sa	nd dry sand
'Type: C=Concentration, D=Depletion, RM=Rec Hydric Soil Indicators: (Applicable to all LRR	duced Matrix, MS=Masked Sand Grains.	Location: PL=Pore Lining, M=Matrix. ndicators for Problematic Hydric Soils':
		2
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)	Reduced Vertic (F18) (outside MLRA 1SOA, B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Stratified
Hydrogen Sulfide (A4) Layers (A5)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
		Red Parent Material (TF2)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Mart (F10) (LRRU)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Ochric (F11) (M LRA151)	Undiantena of huden chiling and the and Oceant
Thick Dark Surface (A12)	Iron-Manganese Masses (F12) (LRR 0, P, T)	'Indicators of hydrophilic vegetation and Coast wetland hydrology must be present, Sandy
Prairie Redox (A16) (MLRA1SOA)	Umbric Surface (F13) (LRR P, T, U)	, , , ,
Mucky Mineral (S1) (LRR0, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (54)	Reduced Vertic (F18) (MLRA 1SOA, 150B)	0.4.)
Sandy Redox (55)	Piedmont Floodplain Soils (F19) (M LRA 14	•
Stripped Matrix (56)	Anomalous Bright Loamy Soils (F20) (MLRA 14	9A, 153C, 153D) Dark
Surface (57) (LRR P, S, T, U) Restrictive Layer (if observed): none obse		
	rved	
Type:		
Depth (inches):		Hydric Soil Present? YesNo ^
Remarks:		
root zone throughout soil pr	ofile	