Environmental, Planning, and Engineering Consultants
307 Fellowship Road
Suite 214
Mt. Laurel, NJ 08054
tel: 856 797-9930
fax: 856 797-9932
www.akrf.com

November 6, 2020

Office of Legal Affairs
Attention: Rulemaking Petitions
Department of Environmental Protection
Mail code 401-04L
401 East State Street, 4th Floor
P.O. Box 402
Trenton, NJ 08625-0402

Re: Petition for Rulemaking Pursuant to N.J.S.A. 52:14 B-4(f) and N.J.A.C. 7:1D-1.1 to Amend Coastal Wetlands Maps 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752
Block 26, Lots 2, 4, 4.01, 5 and 5.01
Lower Alloways Creek Township, Salem County, New Jersey

Dear Sir/Madam:

AKRF, Inc. is representing PSEG Power LLC (PSEG) with respect to the reference above. Pursuant to the New Jersey Administrative Procedure Act, N.J.S.A. 52:14B-4(f), N.J.A.C. 7:1D-1.1 and N.J.A.C. 7:7-2.3, PSEG is submitting this Petition for Rulemaking to the New Jersey Department of Environmental Protection (NJDEP) to modify Coastal Wetlands Maps/Tidelands Grid numbers 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752. Details of the requested Petition are included below.

1. The Full Name and Address of the Petitioners

David Hinchey Jr. – Manager Permitting and Environmental Services
PSEG Power LLC
80 Park Plaza
Newark, NJ

2. The Substance or Nature of the Rulemaking Which is Requested

PSEG Power LLC is the current owner of the Property designated as Block 26, Lot 4, 4.01, 5 and 5.01. PSEG is in the process of completing a land transfer with the United States Army Corps of Engineers (USACE) and will take ownership of additional Property designated as Block 26, Lot 2. All Property is located within Lower Alloways Creek Township, Salem County, New Jersey. PSEG is petitioning to revise Coastal Wetland Maps 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752 that are listed in N.J.A.C. 7:7-2.3(a) to exclude approximately 150 acres of previously developed portions of the property that do not meet the definition of coastal wetlands as described further below. The requested revisions to the maps would result in a Coastal Wetland Boundary that is consistent with the Upper Wetland Boundary/Upper Wetland Line (UWB/UWL) as provided by the NJDEP, Office of Information Resource Management, Bureau of Geographic Information Systems.

3. The Reasons for the Request

The Wetlands Act of 1970 defines coastal wetlands as:

"any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the coastal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or at any inlet, estuary or tributary waterway or any thereof, including those areas now or formally connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water and upon which may grow or is capable of growing some, but not necessarily all, of [listed species]. – N.J.S.A. 13:9A-2

The current delineation of the coastal wetland boundary on maps 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752 do not reflect current conditions relative to previously authorized development at the PSEG Nuclear Salem and Hope Creek Generating Station (Block 26, Lot 4, 40.1, 5 and 5.01) as well as historic development and continuous operation of United States Army Corps of Engineers Artificial Island CDF Cell No.3 (Block 26, Lot 2). Figures included as Attachment A to this Petition provide current and historic aerial photographic documentation of previously authorized development in relation to the 1970 Coastal Wetland maps and 1977 revision.

As discussed in additional detail in the wetland resource report included as Attachment B, these additional 150 acres do not meet the definition of coastal wetlands for the following reasons:

- The areas consist of existing development in the form of existing structures laydown areas, roadways, maintained landscaped buffer or operating dredge disposal facilities and would not be considered a bank, marsh, swamp, meadow or flat;
- The identified areas are sufficiently separated from direct connect or influence of tidal waters;
- Minimum elevation of the identified areas average from 9 to 11 feet (NAVD 88) with maximum elevations as high as 23 feet (NAVD 88) which are significantly higher than the calculated local mean higher high tide elevation of 3.21 (NAVD 88); and
- Due to the disturbed nature of the area, lack of tidal exchange and higher elevation the capability of the areas to grow designated coastal wetland vegetation is limited.

Field investigations by AKRF wetland scientists evaluated the identified areas and observed several small roadside swales (Block 26, Lot 5) and isolated topographic depressions which would be characterized as freshwater wetlands, but noted the lack of connection to regional tidal waters and domination by invasive *Phragmites australis* as opposed to common native coastal wetland species such as *Spartina alterniflora.* Soil borings collected in these area also were reflective of the highlight disturbed nature of the site and included common fill type material. Identification and mapping of areas noted as exhibiting freshwater wetland characteristics will be verified through a separate freshwater wetland delineation and line verification effort to be coordinated by PSEG with the NJDEP.

Portions of Block 26, Lot 2 including the existing USACE Artificial Island confined disposal facility cell no.3 which consists of an approximately 100 acre area isolated by containment berms ranging from 12 to 23 feet (NAVD 88). Areas outside the containment berms are tidally influenced and contain a mix of the invasive *Phragmites australis* as well as native *Spartina alterniflora* and other common coastal wetland vegetation species. Historic construction of CDF Cell no.3 by the USACE predates the development of the 1970 NJDEP Coastal Wetland maps (as noted on historic aerial documentation included in Attachment A) by several decades and was likely identified as coastal wetlands due to the difficulties in distinguishing the area from adjacent tidal marshes when overgrown with invasive *Phragmites australis* in aerial photography.

Routine maintenance and continuous operation as a CDF has resulted in an area that is quite distinct ecologically and functionally separate from adjacent marsh areas.

For the reasons noted above, the Petitioners request that the NJDEP revise Coastal Wetland Maps 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752 to exclude the approximately 197 acres depicted on the figure included in Attachment A. The requested modification would move the coastal wetland boundary east in several locations to consistently mirror the existing upper wetland boundary/upper wetland line *uwb/uwl) and exclude areas of existing development within the Salem and Hope Creek Generating Station and the operational USACE Artificial Island CDF Cell No.3.

4. The Petitioner's Interest in the Request, Including Any Relevant Organization Affiliation or Economic Interest

PSEG Power LLC is the owner of Block 26, Lots 4, 4.01, 5 and 5.01. PSEG Power LLC is currently finalizing a land transfer agreement with the United States Army Corps of Engineers and will also become the owner Block 26, Lot 2. PSEG currently operates the Salem and Hope Creek Generating Station on portions of the property and is participating in the development of the New Jersey Wind Port located within Block 26, Lot 4. Modification to the Coastal Wetland Boundary will result in a more accurate representation of the existing Coastal Wetland resources in relation to existing development and mirror the existing upper wetland boundary/upper wetland line (uwb/uwl).

5. The Statutory Authority Under Which the Department of Environmental Protection May Take the Requested Action

N.J.S.A. 13:9A-1 to N.J.S.A. 13:9A-10 (The Wetlands Act of 1970), and N.J.S.A. 52:14B-4(f)

6. Existing Federal or State Statutes and Rules Which the Petitioner Believes May Be Pertinent to the Request

N.J.S.A. 13:9A-1 to N.J.S.A. 13:9A-10 (The Wetlands Act of 1970), N.J.S.A. 13:9B-1, et seq., N.J.A.C. 7:7-1.1, et seq. N.J.A.C. 7:7-2.3.

Conclusion

For the reasons set forth above, the Petitioners request that the NJDEP amend Coastal Wetland maps 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752 to exclude the approximately 197 acres of existing developed area described above and depicted on the attachments to this Petition.

Should you have any questions or require any additional information in support of this request, please do not hesitate to contact me at (856) 905-1546 or via email at rrech@akrf.com. Thank you for your assistance with this matter.

Sincerely,
AKRF, Inc.

Robert Rech
Vice President

Attachment A

Figures

61.68 Acres

32.78 Acres

55.88 Acres

Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

N

0 650 1,300 Feet

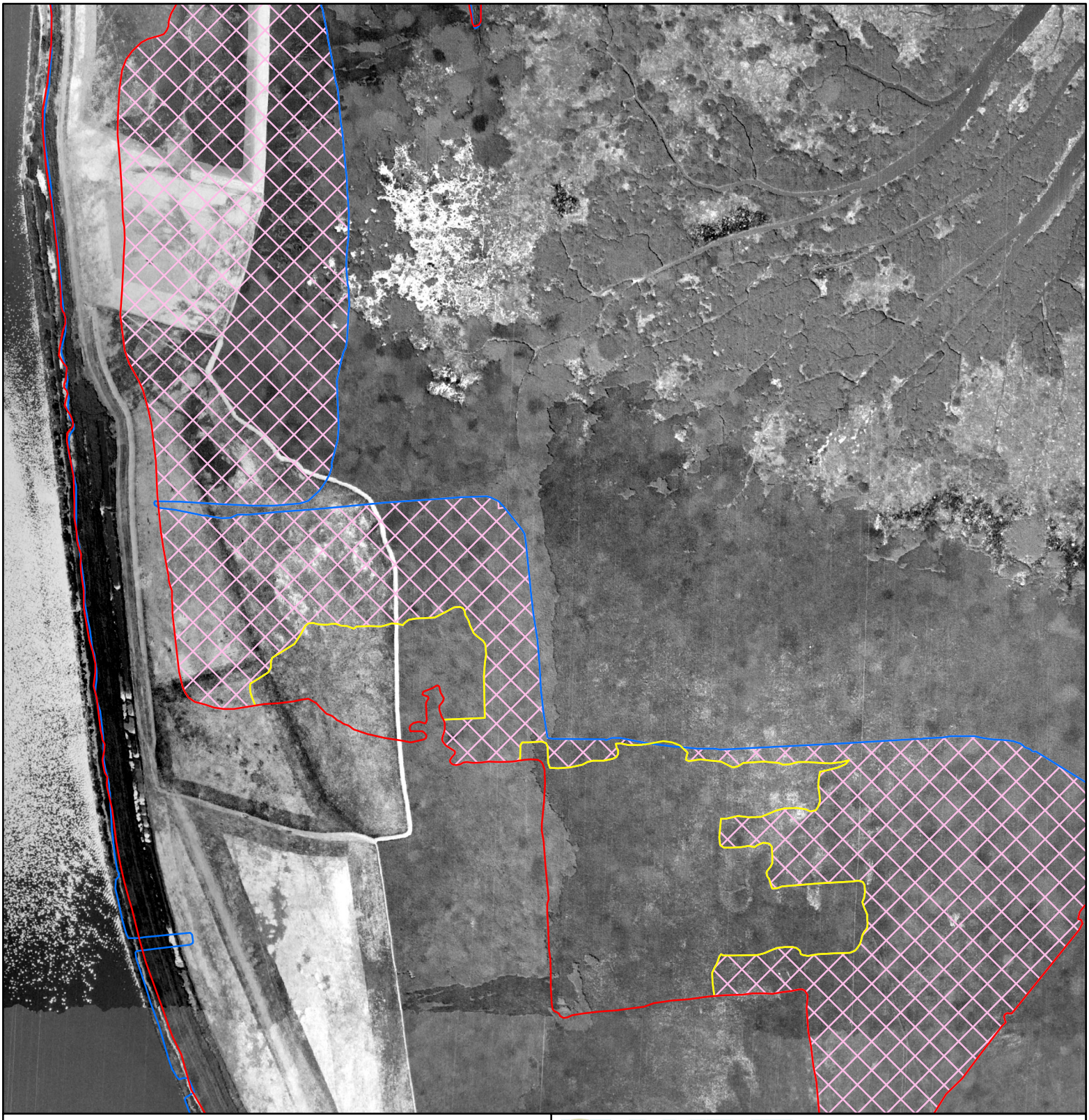
1 inch = 650 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

COASTAL WETLAND MODIFICATION PETITION MAP

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 1	OCTOBER 2020



Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

N

0 650 1,300 Feet

1 inch = 650 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

HISTORIC AERIAL - 1963

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 2	OCTOBER 2020

Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

N

0 650 1,300 Feet

1 inch = 650 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

HISTORIC AERIAL - 1970

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 3	OCTOBER 2020

Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

N

0 650 1,300 Feet

1 inch = 650 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

HISTORIC AERIAL - 1981

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 4	OCTOBER 2020

Attachment B

Wetland Characterization Report

Environmental, Planning, and Engineering Consultants
307 Fellowship Road
Suite 214
Mt. Laurel, NJ 08054
tel: 856 797-9930
fax: 856 797-9932
www.akrf.com

Memorandum

To:	File
From:	Robert Rech
Date:	October 26, 2020
Re:	Wetland Resource Characterization Report Artificial Island Block 26, Lot 2, 4, 4.01, 5 and 5.01 Lower Alloways Creek Township, Salem County, New Jersey
cc:	

Introduction

A wetland characterization field investigation has been conducted on Artificial Island by AKRF wetland scientists in support of a petition to revise the coastal wetland boundary on NJDEP Coastal Wetland Map Nos. 224-1752, 224-1758, 231-1752, 231-1758, and 238-1752. The proposed petition requests modification of the coastal wetland boundary established on the 1970 Coastal Wetland Maps (revised 1977) to be more consistent with the NJDEP Upper Wetland Boundary/Upper Wetland Line (UWB/UWL) as provided by the NJDEP, Office of Information Resource Management, Bureau of Geographic Information Systems.

Site Description

This wetland characterization report summarizes the findings of various field visits conducted at the subject area located on Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The subject area is identified as Block 26, Lots 2, 4, 4.01, 5 and 5.01 on the Lower Alloways Creek Township tax maps. The subject area contains portions of the PSEG Nuclear Salem and Hope Creek Generating Station and the United States Army Corps of Engineers Artificial Island Confined Disposal Facility Cell No.3. Block 26, Lot2 4, 4.01, 5 and 5.01 (Salem and Hope Creek Generating Station) are owned by PSEG Power LLC. Block 26, Lot 2 (USACE CDF Cell No.3) is currently owned by the USACE, but is the subject of a nearly completed land transfer agreement that will transfer ownership to PSEG Power LLC.

The Salem and Hope Creek Generating Station consists primarily of a central industrial facility consisting of three (3) nuclear generating units and a variety of support and accessory buildings, structures and facilities including laydown areas, parking and access roadways. North and east of the main facility are additional support/accessory areas as well as maintained landscaped areas, storm water infrastructure (swales, ponds and freshwater wetlands) and 500 kV overhead transmission infrastructure. Also of note

are the operating PSEG Nuclear Confined Disposal Facility and PSEG Nuclear Security training facility and shooting range on the northern edge of the property.

Block 26, lot 2 consists primarily of USACE Artificial Island CDF Cell No.3 (approximately 100 acres), mapped and functional coastal wetlands along the western (Delaware River) shoreline and large expanses of mapped and functional coastal wetlands associated with Alloway Creek to the east. USACE CDF Cell No.3 is an approximately 100 acre operational dredge management facility maintained by the USACE. The facility includes a perimeter containment berm ranging in elevation from 10 feet (NAVD 88) to approximately 23 feet (NAVD 88). The facility contains large quantities of hydraulically dredged material from the Delaware River consisting of predominantly sand. A discharge structure is used to allow water to drain from the facility without allowing for a direct connection for tidal flow into the CDF.

Coastal Wetlands

The Wetlands Act of 1970 defines coastal wetlands as:

"any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the coastal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or at any inlet, estuary or tributary waterway or any thereof, including those areas now or formally connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water and upon which may grow or is capable of growing some, but not necessarily all, of Salt meadow grass (Spartina patens), spike grass (Distichlis spicata), black grass (Juncus gerardi), saltmarsh grass (Spartine alterniflora), saltworts (Salicornia Europaea, and Salicornia bigelovii), Sea Lavendar (Limonium carolinianum), saltmarsh bulrushes (Scirpus robsutus and Scirpus paludosus var atlanticus), sand spurrey (Spergularia marina), switch grass (Panicum virgatum), tall cordgrass (Spartina pectinate), hightide bush (Iva frutescens var oraria), cattails (Typha angustifolia and Typha latifolia), spike rush (Eleocharis rostellata), chairmaker's rush (Scirpus Americana), bent grass (Agrostis palustris), and sweet grass (Hierochloe odorata)". – N.J.S.A. 13:9A-2

Artificial Island was purposely constructed by the USACE at the turn of the century as a dredge material disposal facility which resulted in the creation of new land. Artificial Island consists of hydraulic fill that was placed within a timber containment bulkhead which resulted in an elevated area suitable for future development (Salem and Hope Creek Generating Station) and surrounded by tidally influenced coastal wetlands. As noted above portions of Artificial Island remain as functioning dredge material management facilities.

Functional coastal wetlands on Artificial Island can be challenging to differentiate from freshwater wetlands and even areas of relatively (not necessarily native undisturbed, but not recently or routinely disturbed) undisturbed vegetated areas. Invasive *Phtagmites australis* is ubiquitous throughout the region and can be found in nearly all ecological communities. Coastal wetlands are distinguished through the obvious direct tidal interconnection and common transition from fringe areas containing the invasive plant species to areas of higher salinity and larger tidal exchange which includes increasing concentrations of native coastal wetland species listed above. Areas along the Delaware River shoreline as well as north and east of the power plant and USACE CDF approaching Alloway Creek exhibit these characterisitcs.

Freshwater Wetlands

The NJDEP Freshwater Wetland Rules define freshwater wetlands as:

"Freshwater Wetland" means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the department, in designating a wetland, shall use the 3-parameter approach (i.e. hydrology, soils, and vegetation) enumerated in the April 1, 1987 interim-final

draft "Wetland Identification and Delineation Manual" developed by the United States Environmental Protection Agency, and any subsequent amendments thereto.

In addition to mapped and functional coastal wetlands as defined above, Artificial Island contains a variety of areas that can be characterized as freshwater wetlands. These areas include storm water management features such as swales, small scale detention basins and larger retention basins as well topographic low points which collect precipitation or surface water runoff and have low percolation rates due to the presence of low permeability hydraulic fill. These freshwater wetland features are typically dominated by invasive *Phragmites australis*, are directly connected to the facilities storm water collection/management infrastructure and are isolated from regional tidal waters or wetland complexes. These characteristics are important to note to highlight the distinct functional differences between freshwater and coastal wetlands on Artificial Island which can be difficult to discern due to the pervasive presence of invasive plant species in regional freshwater and coastal wetland communities.

Wetland Characterization

Field surveys of the subject area included observation and characterization of existing topography, hydrology, soils and vegetation. Observations were compared to regulatory definitions of freshwater and coastal wetlands. The focus of the field surveys was to identify freshwater wetlands or areas that may have been mischaracterized as coastal wetlands. Existing developed areas within the security perimeter of the Salem and Hope Creek Generating Station or areas that have previously been excluded from the coastal wetland boundary were not surveyed as part of this exercise. For discussion purposes, the field survey was broken down into smaller areas to more easily detail findings.

Area 1

Area 1 includes the portion of the subject area identified as Block 26, Lot 2. This area contains the USACE Artificial Island CDF Cell No.3. CDF Cell No.3 consists of an approximately 100 acre facility which is used for management of dredge material from the Delaware River. The facility consists of a low permeability containment berm on all sides that ranges from 10 feet (NAVD 88) to 23 feet (NAVD 88). A dirt access road is maintained along the western edge that allows access to CDF Cell Nos. 1, 2, and 3 from the Salem and Hope Creek Generating Station. A discharge structure is maintained and operated allowing the USACE to dewatering the CDF Cell following placement of hydraulic fill once suspended sediments have settled out. The Artificial Island CDF was constructed and has been in continuous operation by the USACE for a period that extends well before the development of the NJDEP Coastal Wetland maps in 1970.

- Topography – As noted above, CDF Cell No.3 is surrounded by a perimeter containment berm which ranges from 10 feet (NAVD 88) to 23 feet (NAVD 88). Material within CDF Cell No.3 ranges from 6 feet (NAVD 88) to 20 feet (NAVD 88). Functional coastal wetlands along the Delaware River shoreline and east of the CDF associated with Alloway Creek have elevations which range from 3 feet (NAVD 88) to 5 feet (NAVD 88). The elevations within the functional coastal wetlands correspond with calculated local mean higher high water elevation of 3.21 feet (NAVD 88). Elevations of the perimeter containment berm are significantly above this tidally influenced elevation and therefore prevent tidal exchange with the majority of Area 1 limiting establishment of coastal wetlands.
- Hydrology – The elevations of the containment berms and internal fill material limit the hydrologic influence to Delaware River water included with placement of hydraulic dredging operations and detention of precipitation. Groundwater elevation is significantly deep and does not influence surface conditions and tidal interaction is prevented further through the use of tide gates on discharge pipes. Areas if impounded water are noted on the southern end of the CDF Cell, but are part of active dewatering operations through the permitted discharge structure.
- Soils – Due to the continued operation of the facility for placement of dredge material, soil characterization is unlikely to relate to wetland functionality. Soils from recent Delaware River

navigation channel deepening activities consists predominately of sands and are noted throughout the CDF.

- Vegetation – Similar to soils, the continuous disturbed nature of the facility due to relatively frequent activity has resulted in a predominance of invasive *Phragmites australis.* Monoculture stands of the invasive species are noted throughout the CDF. Surrounding tidal marshes also contain the invasive plant, but to a lesser extent and show an increase in population of native coastal wetland species with increasing proximity to tidal waters with higher values of salinity.

Area 2

Area 1 includes the portion of the subject area identified as Block 26, Lot 4. The area contains the PSEG Nuclear CDF which is used for management of maintenance dredging material as well as desilting of the water intake structures and cooling tower basin. This area was initially utilized for construction support and laydown during construction of the Salem and Hope Creek Generating Stations. The area has since been continuously utilized and managed to support operation of the Station. This area also contains the PSEG Nuclear Security Training Center and target range.

- Topography – Similar to USACE CDF Cell No.3, the PSEG Nuclear CDF includes a perimeter containment berm which ranges from 5 feet (NAVD 88) to 7 feet (NAVD 88). The containment berm has historically been located along the entire perimeter of the facility, but has recently been modified due to activities associated with the Silver Run 230 kV transmission line construction project. Internal elevations range from 6 feet (NAVD 88) to 10 feet (NAVD 88) due to fluctuations in amounts of material deposited historically. Functional coastal wetlands along the Delaware River shoreline and east of the CDF associated with Alloway Creek have elevations which range from 3 feet (NAVD 88) to 5 feet (NAVD 88). The elevations within the functional coastal wetlands correspond with calculated local mean higher high water elevation of 3.21 feet (NAVD 88). Elevations of the perimeter containment berm are above this tidally influenced elevation and therefore prevent tidal exchange with Area 2 limiting establishment of coastal wetlands.
- Hydrology – Also similar to USACE CDF Cell No.3, hydrologic characteristics are limited by the perimeter containment berms. Groundwater is sufficiently below the surface elevation of the majority of Area 2 and interconnection with tidal waters are limited by the overall elevation of the area. Hydrologic characteristics are predominately influenced by surface water runoff and detention of precipitation. Impounded water is noted on the eastern half of the CDF which is managed through the authorized discharge structure located on the northeastern portion of the facility.
- Soils – Soils are highly disturbed and characterized by the historic placement of hydraulic fill during original construction of Artificial Island, placement of fill during construction of the Salem and Hope Creek Generating Station, and the placement of maintenance dredge and desilt material.
- Vegetation – Due to the disturbed nature of the area, vegetation is dominated by invasive *Phragmites australis*. The invasive species is noted throughout the area on containment berms and internal to the facility. Routine maintenance activities within the CDF to maintain access and functionality of the permitted facility is conducted which can allow for temporary establishment of native upland and wetland species (in temporary water impoundments), but are quickly outcompeted by the invasive species.

Area 3

Area 1 includes the portion of the subject area identified as Block 26, Lot 5. The area contains an existing PSEG Nuclear laydown/emergency preparation area, existing employee parking areas, chill water plant, and maintained 500 kV transmission ROW and associated maintained buffer.

- Topography – The area predominately consists of existing developed areas including soil/gravel laydown, asphalt parking, asphalt roadways, structures and maintained vegetated areas. Topography is highly variable in this area and ranges from 8 feet (NAVD 88) to 15 feet (NAVD 88). The higher elevations are actually noted in the maintained vegetated areas along and adjacent

to the 500 kV transmission ROW (3 individual circuits). Surrounding tidal marsh areas associated with Alloway Creek range from 3 feet (NAVD 88) to 5 feet (NAVD 88). Several roadside depressions are noted as well as small topographic low spots (still well above the adjacent tidal areas) which support hydrophytic vegetation and would likely be classified as freshwater wetlands. These areas are isolated from larger regional wetland complexes.

- Hydrology – Hydrologic influence is almost exclusively surface water runoff and retention of precipitation. Average elevations are too high for direct groundwater influence (with the exception of a localized perched source related to irregular subsurface conditions).
- Soils – Soils are highly disturbed and characterized by the historic placement of hydraulic fill during original construction of Artificial Island and placement of fill during construction of the Salem and Hope Creek Generating Station and transmission infrastructure. Soils observed in roadside swales and persistent impoundment of water in topographic low spot revealed lower chroma soils and oxidation indicators suggesting freshwater wetland functionality.
- Vegetation – Vegetation in portions of Area 3 showed a more varied mixture of native upland vegetation including shrubs and trees. Predominance of invasive *Phragmites australis* increased closer to the fringe of tidally influenced areas and is eventually replaced by native coastal wetland vegetation as tidal influence increased along with values of salinity.

Summary

Based on field surveys completed by AKRF wetland scientists starting in April 2019 and continuing through more recent field activities in October 2020 have identified areas which could be characterized as freshwater or coastal wetland in the vicinity of the PSEG Nuclear Salem and Hope Creek Generating Station and the USACE Artificial Island CDF Cell No.3 (Block 26, Lots 2, 4, 4.01, 5 and 5.01).

Freshwater wetlands were characterized based on the presence of hydric soil indicators and suitable freshwater wetland hydrology (groundwater or surface water impoundment). Hydrophytic vegetation was discounted to a certain degree due to the ubiquitous presence of invasive *Phragmites australis* in both freshwater wetland and upland areas. Freshwater wetlands were noted commonly as stormwater infrastructure or topographic low areas.

Coastal wetlands were characterized based on localized elevation regime's which consistently matched the calculated mean high and mean higher high water elevations observed in large regional coastal wetland communities noted throughout the surrounding area. Additionally, direct influence from tidal waters/wetlands along the Delaware River and Alloway Creek were noted as critical characteristics of coastal wetlands. Presence of invasive *Phragmites australis* were noted as common in coastal wetland fringes and with decreasing dominance as increased tidal influence and higher salinities in functional coastal wetland areas.

Robert Rech

Appendix 1

Figures

Area 1

Area 2

Area 3

Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

N

0 650 1,300 Feet

1 inch = 650 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

SITE LOCATION MAP

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 1	OCTOBER 2020

Legend

- AKRF Field Delineation - April 2020
- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary

N

0 1,000 2,000 Feet

1 inch = 1,000 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

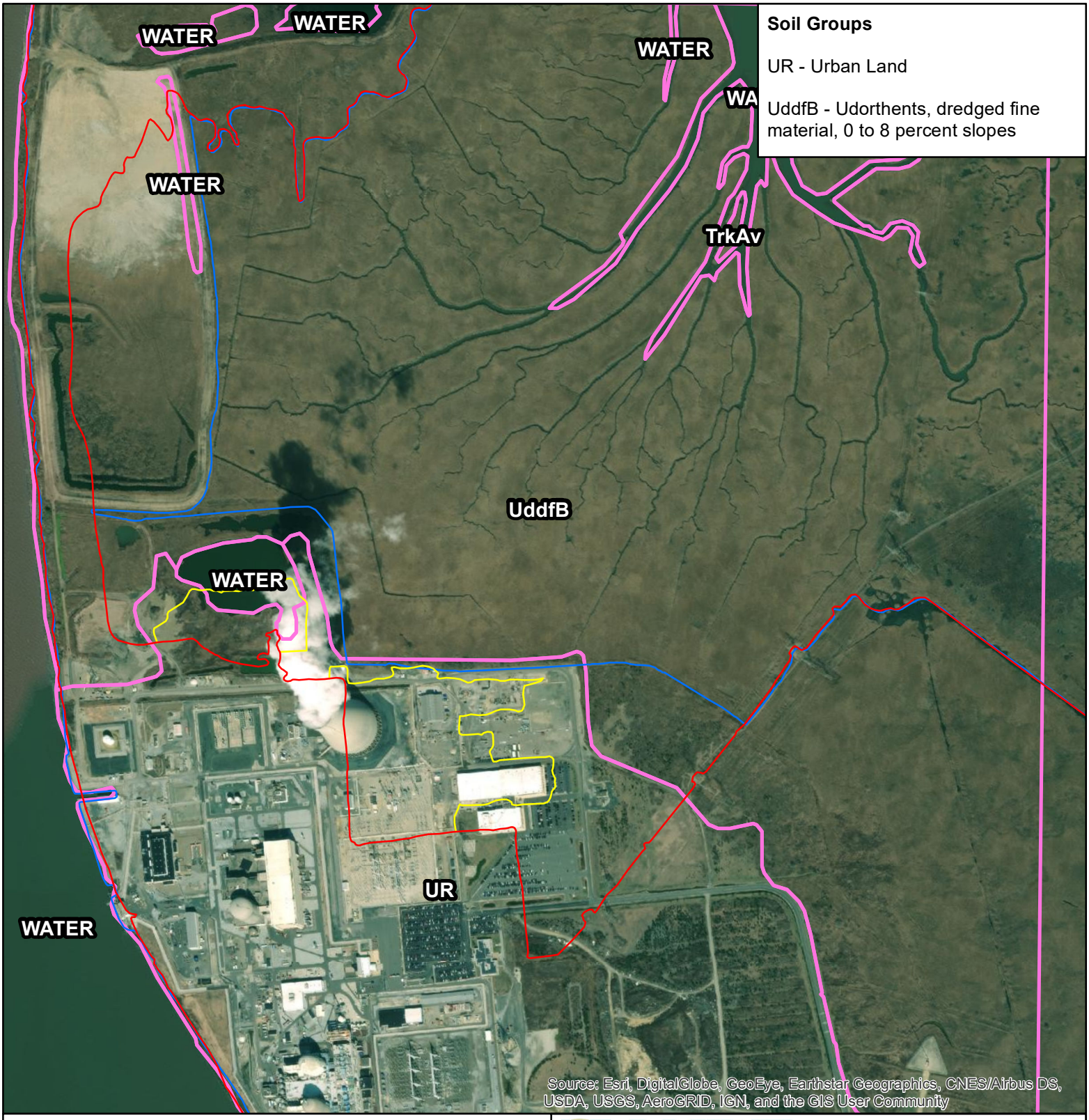
FRESHWATER WETLAND MAP (PENDING NJDEP VERIFICATION)

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 2	OCTOBER 2020

Appendix 2

NRCS Soils Map



Legend

- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Soil Classification Boundary

N

0 1,000 2,000 Feet

1 inch = 1,000 feet

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

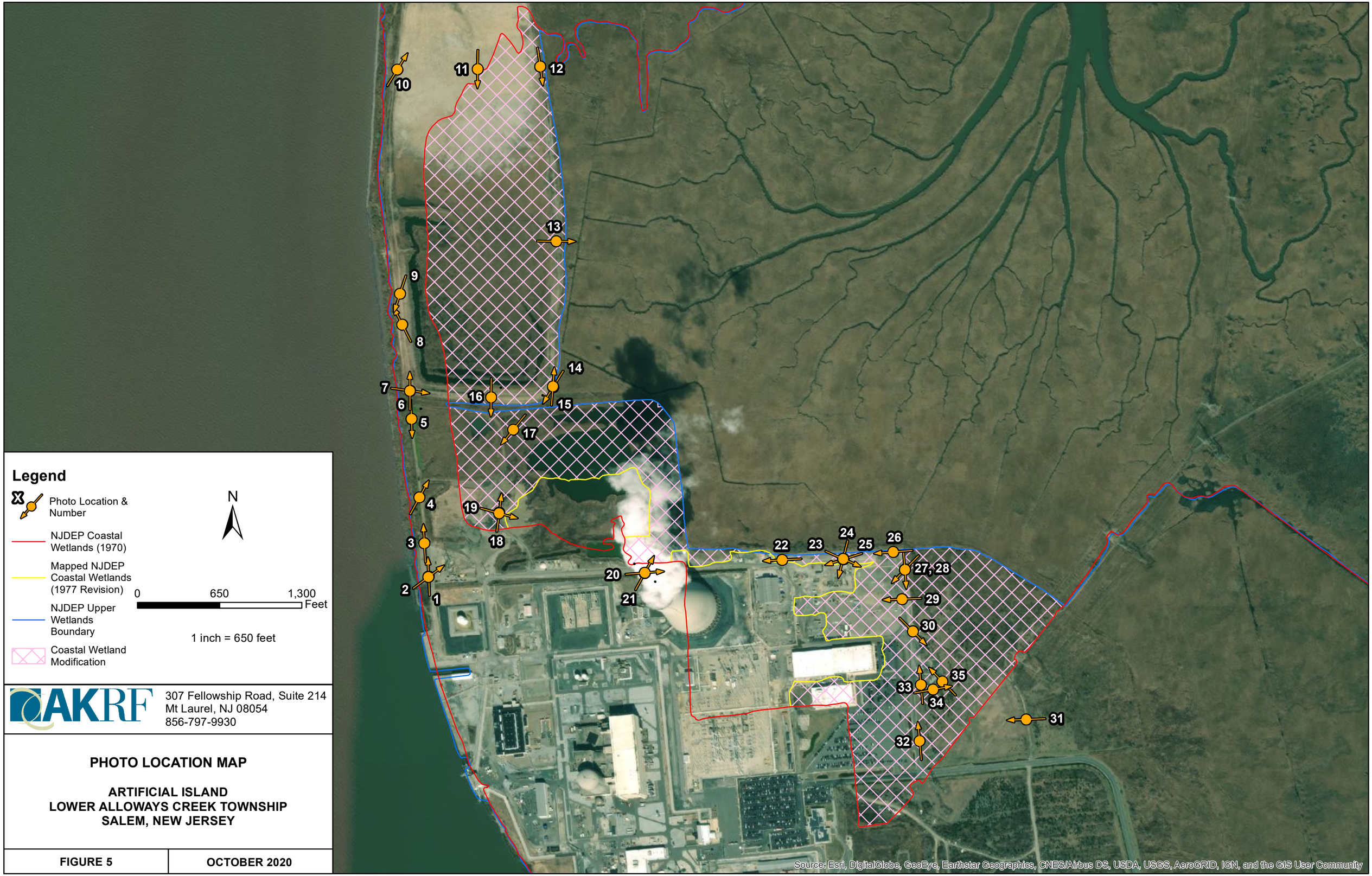
NRCS SOILS MAP

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 3	OCTOBER 2020

Attachment C

Photo Documentation



Legend

- Photo Location & Number
- NJDEP Coastal Wetlands (1970)
- Mapped NJDEP Coastal Wetlands (1977 Revision)
- NJDEP Upper Wetlands Boundary
- Coastal Wetland Modification

AKRF
307 Fellowship Road, Suite 214
Mt Laurel, NJ 08054
856-797-9930

PHOTO LOCATION MAP

ARTIFICIAL ISLAND
LOWER ALLOWAYS CREEK TOWNSHIP
SALEM, NEW JERSEY

FIGURE 5	OCTOBER 2020

Photo 1

Photo looking north along the existing access road to the PSEG and USACE Artificial Island CDF

Photo 2

Photo looking northeast towards the recently constructed Silver Run H-frame/overhead transmission

Photo 3

Photo looking north along the existing maintained access road to the PSEG and USACE CDF. Note coastal wetlands along Delaware River shoreline on the left.

Photo 4

Photo looking northeast into the PSEG CDF.

Photo 5

Photo looking south along the existing access road to the PSEG and USACE CDFs. Note coastal wetlands along Delaware River shoreline on the right.

Photo 6

Photo looking north along the western berm of the USACE CDF Cell No.3. Photo taken standing on top of berm. Note Delaware River and shoreline coastal wetlands on the left.

Photo 7

Photo looking east along the southern berm of the USACE CDF Cell No 3. Photo taken from top of berm.

Photo 8

Photo taken looking north/northwest towards the access road below the USACE CFD Cell No.3 western berm. Note Delaware River and shoreline coastal wetlands on the left.

Photo 9

Photo taken looking south/southwest towards the access road below the USACE CDF Cell No.3 western berm. Note Delaware River and shoreline coastal wetlands on the right.

Photo 10

Photo looking northeast into the USACE CDF Cell No.3.

Photo 11

Photo looking south into the USACE CDF Cell No.3

Photo 12

Photo looking south along the eastern berm of the USACE CDF Cell No.3.

Photo 13

Photo looking east into the marsh from the USACE CDF Cell No.3 eastern berm.

Photo 14

Photo looking southwest along the bottom of the USACE CDF Cell No.3 berm.

Photo 15

Photo looking northeast along the bottom of the USACE CDF Cell No.3 berm.

Photo 16

Photo looking south into the PSEG CDF. Photo taken from the top of the USACE CDF Cell No.3 southern berm.

Photo 17

Photo looking southwest in the PSEG CDF.

Photo 18

Photo looking north in the PSEG CDF.

Photo 19

Photo looking southeast in the PSEG CDF.

Photo 20

Photo looking east along the PSEG Nuclear perimeter road.

Photo 21

Photo looking northeast towards the PSEG Nuclear Security Training Center and target range.

Photo 22

Photo looking west towards a PSEG Nuclear maintenance building.

Photo 23

Photo looking southeast into a PSEG Nuclear laydown/emergency preperation area.

Photo 24

Photo looking south into a PSEG Nuclear laydown/emergency preperation area.

Photo 25

Photo looking southwest towards the PSEG Nuclear Combo Shop (located in laydown area).

Photo 26

Photo looking west along the PSEG Nuclear perimeter road.

Photo 27

Photo looking southwest over the PSEG Nuclear laydown/emergency preparation area, towards the PSEG Nuclear admin building.

Photo 28

Photo looking south along the PSEG Nuclear perimeter road.

Photo 29

Photo looking west into the PSEG Nuclear laydown/emergency preperation area.

Photo 30

Photo looking southwest towards PSEG Nuclear chill water building. Note small roadside swale.

Photo 31

Photo looking west towards PSE&G 500 kV transmission ROW.

Photo 32

Photo looking north along PSEG Nuclear perimeter road.

Photo 33

Photo looking north past the PSEG Nuclear chill water building.

Photo 34

Photo looking east/northeast behind the PSEG Nuclear chill water building.

Photo 35

Photo looking northwest towards the PSEG Nuclear chill water building.