

# ATTACHMENT 2 Wetland Delineation Technical Report

# Glassboro-Camden Line EIS November 2020

Prepared by:



**Prepared for:** 







Project information contained in this document, including estimated limits of disturbance that could result with construction or operation of the proposed GCL, is based on conceptual design parameters that represent a reasonably conservative basis for conducting environmental analyses. As the proposed GCL is advanced through preliminary engineering and construction, efforts will continue to be made to further refine the design and minimize the project footprint. These refinements may result in the potential to avoid and further reduce the adverse effects outlined in this document and as described within this Environmental Impact Statement.

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# **Acronyms**

AA Alternatives Analysis

EIS Environmental Impact Statement
NEPA National Environmental Policy Act

NOI Notice of Intent

PIP Public Involvement Plan ROD Record of Decision

USACE US Army Corp of Engineers GCL Glassboro-Camden Line

### **Foreword**

This report, originally prepared in January 2014, was based on field work conducted between August 20, 2013 and December 31, 2013. Subsequently, the project was put on hold until 2017, at which point the project design concept had changed slightly (i.e., changes in some limits of disturbance). In order to account for changes in design and possible changes to wetland conditions over time, confirmatory field visits were conducted by Michael L. Francis, Ph.D. in October 2017. Specifically, in the areas of the proposed Mantua-Pitman station and several areas along the corridor. Based on the findings of these field investigations, the extent of flagged wetland areas as well as the context as originally described remained substantially unchanged since the original surveys in August-December 2013. Therefore, the description of the potentially affected environs of the project, as described per the original survey remain valid. It is noted, however, that the identified wetlands will need to be re-flagged and re-surveyed prior to any permit applications, per NJDEP review requirements.

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#### 1 INTRODUCTION

This report describes the delineation of wetlands within the Glassboro-Camden Line (GCL) project study area in accordance with relevant federal and state regulation. It contains methodology, findings, a statement of qualifications, and references. The findings of this report are to be used to analyze the potential environmental effects of the proposed GCL.

#### 1.1 Project Description

The Glassboro-Camden Line ("the proposed GCL" or "the proposed project") is a proposed 18-mile expansion of transit service in Southern New Jersey that would traverse eleven communities between the City of Camden (Camden County) and the Borough of Glassboro (Gloucester County). The proposed GCL would restore passenger rail service primarily along an existing Conrail freight corridor using light rail vehicles similar to the NJ TRANSIT River LINE. In general, this new transit service would operate at-grade, but some portions would be grade-separated over existing roads and waterways. The proposed GCL would run on new dedicated tracks and/or be separated from the freight trains temporally, allowing the current Conrail freight operations to continue. The proposed project would provide 14 new transit stations, including five walk-up stations and nine proposed park-and-ride facilities, and two vehicle maintenance facilities (VMF). The proposed GCL would provide connections (in Camden) to Philadelphia, Trenton, and other points in the region via the PATCO Speedline, the NJ TRANSIT River LINE, and NJ TRANSIT bus routes.

#### 1.2 Regulatory Framework

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) was given the responsibility to regulate waterways and freshwater wetlands associated with those waterways. These areas are considered "Waters of the U.S." As the result of a 1993 Memorandum of Agreement (MOA), the U.S. Environmental Protection Agency (EPA) delegated that authority to the New Jersey Department of Environmental Protection (NJDEP) pursuant to the New Jersey Freshwater Wetlands Protection Act (N.J.S.A. 13:9B). The MOA allows NJDEP to assume authority to regulate freshwater wetlands and streams in most of New Jersey. The USACE maintains jurisdiction, along with the NJDEP, over waterways that more clearly affect interstate commerce. Areas under the jurisdiction of the USACE continue to include and tidal (coastal) wetlands, navigable waters, and wetlands located within 1,000 feet inland of navigable waterways. For those wetland and waterways not under the jurisdiction of the USACE, the NJDEP maintains sole jurisdiction. Portions of this project fall within the jurisdiction of both the USACE and the NJDEP.

In addition, the Coast Guard has jurisdiction over tidal waters that are considered navigable. Specifically, these are waters that are subject to tidal influence, and whether listed or not, they are considered navigable for the purposes of general Coast Guard jurisdiction to the limits of tidal influence ("head of tide").

#### 1.3 Definition of Jurisdictional Limits

Wetlands are defined by the U.S. Army Corps of Engineers (USACE) and the EPA as:

"Wetlands are those areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." (33 CFR Section 328.3 and 40 CFR Section 230.3)

This definition emphasizes three characteristics needed for the creation of wetlands, i.e. hydrophytic vegetation, hydric soils and hydrology.

The NJDEP has adopted the January 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands<sup>1</sup> (the "Federal Manual") as the technical basis for identifying and delineating wetlands in New Jersey.

NJDEP categorizes water resources into groups. These resources include state open waters, freshwater wetlands, coastal wetlands, and drainage ditches. A description of each resource category is provided below.

#### 1.3.1 State Open Water

"State open waters" include all waters of the State, including waters of the United States, but excluding ground water and freshwater wetlands. The following waters will generally not be considered "State open waters":

- 1. Non-tidal drainage and irrigation ditches excavated on dry land;
- 2. Artificially irrigated areas which would revert to upland if the irrigation ceased;
- 3. Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- 4. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons;
- 5. Water-filled depressions created in dry land incidental to construction or remediation activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of "waters of the United States";
- 6. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Federal act (other than cooling ponds);
- 7. Erosional channels less than two feet wide and six inches deep in upland areas resulting from poor soil management practices; and
- 8. Stormwater management facilities created in uplands.

<sup>&</sup>lt;sup>1</sup>https://digitalmedia.fws.gov/digital/collection/document/id/1341/

#### 1.3.2 Freshwater Wetlands

"Freshwater wetland" or "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. These include tidally influenced wetlands which have not been included on a promulgated map pursuant to the Wetlands Act of 1970, N.J.S.A. 13:9A-1 et seq.

#### 1.3.3 Coastal Wetlands

A "coastal wetland" is defined 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 Delaware River, Raritan Bay, Barnegat Bay, Sandy Hook Bay, Shrewsbury River including Navesink River, Shark River, and the costal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of one foot above local extreme high water, and upon which may grow or is capable of growing any of a list of enumerated plant species."

#### 1.3.4 Drainage Ditch

A "ditch" means a linear topographic depression with bed and banks of human construction, which conveys water to or from a site, which is surrounded by uplands and which is not located within a wetland. This does not include channelized or redirected natural water courses.

## 1.4 Mandatory Technical Criteria for Wetland Identification

According to the *Federal Manual*, wetlands possess three essential technical criteria: hydrophytic vegetation, hydric soils, and wetland hydrology, which are the driving forces creating all wetlands. These characteristics, and their technical criteria for identification purposes, were evaluated in accordance with the following discussions. The three technical criteria specified are typically required to be present for an area to be identified as a wetland.

#### 1.4.1 Hydrophytic Vegetation

The Federal Manual defines hydrophytic vegetation as macrophytic plant life growing in water, soil or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. Hydrophytic vegetation is identified in the field by using the indicators described in Table 1, "Plant Indicator Status According to the National Wetlands Inventory." Plants occurring in wetlands were categorized in the USACE North American Digital Flora: National Wetlands Plant List (2013). The list separates vascular plants into five basic groups based on a plant species' frequency of occurrence in wetlands.

Indicator Category	Symbol	Occurrence in Wetlands
Obligate Wetland	OBL	>99%
Facultative Wetland	FACW	67 to 99%
Facultative	FAC	34 to 66%
Facultative Upland	FACU	1 to 33%
Upland	UPL	<1%

Table 1: Plant Indicator Status According to the National Wetlands Inventory

A site is dominated by hydrophytic vegetation when the most abundant species in each stratum (e.g., tree, shrub, and/or herbaceous) are designated as obligate wetland, facultative wetland, or facultative species.

#### 1.4.2 Hydric Soils

The definition of a hydric soil is a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are considered hydric if the soil, in an unaltered state, was hydric. Some soil series, designated as hydric, have phases that are not hydric depending on water table, flooding, and ponding characteristics.

Several indicators are available for determining whether a given soil meets the definition and criteria for hydric soils. The manual lists several indicators for non-sandy and sandy soils; the presence of any one of which allows for the determination of a soil as hydric.

Hydric soils lists developed for individual detailed soil surveys are known as Local Hydric Soils Lists. They are available from state or county NRCS offices and over the internet from the Soil Data Mart (http://soildatamart.nrcs.usda.gov/). Local Hydric Soils Lists have been compiled into a National Hydric Soils List available at (http://soils.usda.gov/use/hydric/). However, use of Local Hydric Soils Lists is preferred since they are more current and reflect local variations in soil properties.

#### 1.4.3 Wetland Hydrology

Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation to determine whether an area is a wetland under the *Federal Manual*. Indicators of hydrophytic vegetation and hydric soil generally reflect a site's medium to long term wetness history. They provide readily observable evidence that episodes of inundation or soil saturation lasting more than 5 percent of the growing season have occurred repeatedly over a period of years and that the timing, duration, and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology. If hydrology has not been altered, vegetation and soils provide the strongest evidence that wetland hydrology is present. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime and that hydric soils and hydrophytic vegetation

are not relicts of a past hydrologic regime. Wetland hydrology indicators confirm that an episode of inundation or soil saturation occurred recently, but may provide little additional information about the timing, duration, or frequency of such events (National Research Council, 1995).

Permanent or periodic inundation, or seasonal soil saturation are the driving forces behind wetland formation. The presence of water for one week or more during the growing season typically creates anaerobic conditions in the soil, which affects the types of plants that can grow and the types of soils that develop. Numerous factors influence the wetness of an area, including precipitation, stratigraphy, topography, soil permeability, and plant cover. All wetlands have at least a seasonal abundance of water. This water may come from direct precipitation, overbank flooding, surface water runoff due to precipitation or snow melt, or groundwater discharge. The frequency and duration of inundation and soil saturation may vary widely from permanent flooding or saturation to irregular flooding or saturation.

#### 2 PRINCIPAL CONCLUSIONS

Thirty-two jurisdictional water resources were found within the study area, based on off-site and on-site findings. As identified in Table 3, "Water Resources Summary," the resources identified include mapped coastal wetlands, freshwater wetlands, and drainage ditch. Locations of the wetlands can be found in Appendix 2-A, "Water Resource Location Map." Datasheets for the wetland and upland points can be found in Appendix 2-B, Wetland Data Forms." Photographs of the resources are located in Appendix 2-C, "Photographs."

#### 3 METHODOLOGY

Wetlands were identified and delineated utilizing *Federal Manual*. Both off-site and on-site methodologies were used in this study. The project study area was defined as an area encompassing a 200 foot radius of the proposed GCL alignment (See Figure 2, "NRCS Soil Survey Map").

# 3.1 Off-Site Methodology

The following off-site activities were conducted:

- The Woodbury, Pittman West and Pittman East, New Jersey United States Geological Survey (USGS)
   7.5-minute topographic quadrangles were reviewed for local and regional environmental setting relevant to surface waters, wetlands, and contours;
- The U.S. Department of Agriculture, Natural Resource Conservation Service Soil Surveys for Camden and Gloucester County, New Jersey were reviewed for project study area soil types;
- The NJDEP GeoWeb was reviewed for mapped New Jersey Wetlands;
- The applicable Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for Camden County (dated 9/2007) and Gloucester County (dated 1/2012) were reviewed for 100-year floodplain areas; and

 Camden and Gloucester County aerial mapping, GIS mapping, tax and parcel data were reviewed to identify potential wetlands, streams and 100-year floodplains. The GIS mapping uses National Wetland Inventory (NWI) maps as their basis for wetland identification.

#### 3.2 On-Site Methodology

On-site investigative activities included site reconnaissance of the entire project study area to identify potential wetlands and waterways. Among these tasks were the identification of hydrophytic plant species, evidence of hydrology, and hydric soils. The indicator status of plants collected from the site was determined using the *National Wetland Plant List* (2013). Soil samples were obtained at depths of approximately 46 to 66 centimeters (18 to 26 inches). Soil colors were determined using the Munsell Soil Color Chart (Gretag-Macbeth, 2000).

Soil samples were obtained at locations that exhibited wetland hydrology and/or vegetation to verify whether the area was a wetland. Data sheets to document results of soil analysis, types of vegetation present and hydrologic indicators were prepared at each sample location. The field data sheets are found in Appendix 2-B, "Wetland Data Forms." Due to the similarity of conditions within the project study area, only representative upland datasheets were completed. Limits of the identified wetlands were flagged and labeled. The wetland boundaries depicted were surveyed using a Global Positioning System (GPS) with sub-meter accuracy and plotted on drawings (See Appendix 2-A, "Water Resource Location Maps").

#### 4 FINDINGS

#### 4.1 Off-Site Findings

Review of the region-specific USGS topographic quadrangles (Figure 1, "USGS Site Location Map") revealed that land use adjacent to the project study area is a mix of residential, commercial and educational uses as well as some undeveloped forested and non-forested areas.

Based on a review of soils mapping, hydric and non-hydric soils were identified throughout the project study area (Figure 2, "NRCS Soil Survey Map"). Table 2, "Project Study Area Soils," identifies specific soils within the project study area.

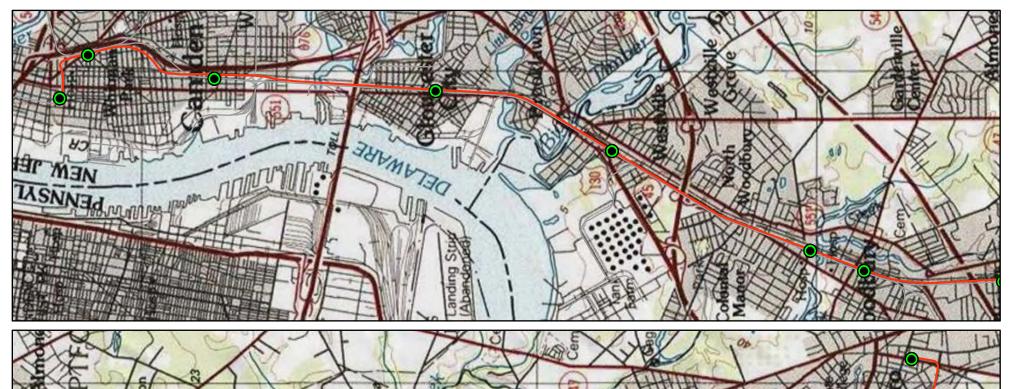
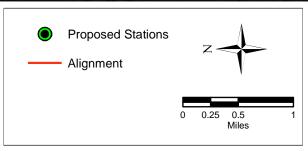


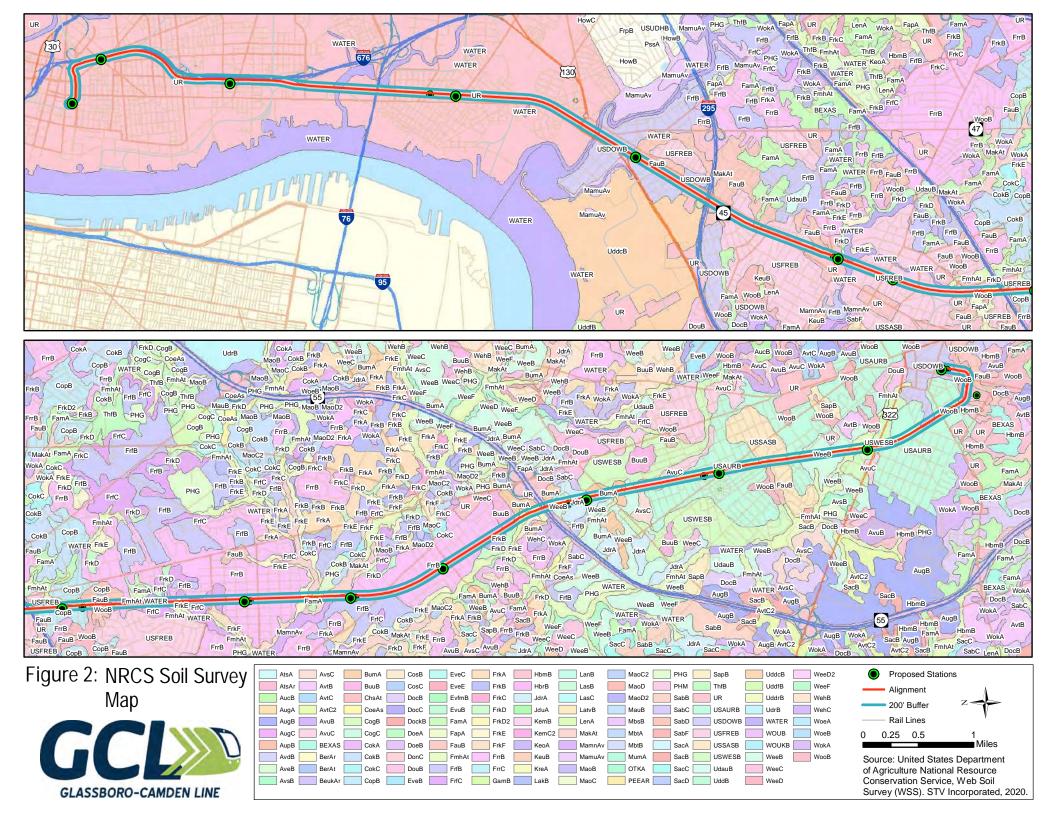


Figure 1: USGS Site Location Map





Source: United States Geological Survey (USGS) Topographic Maps. http://goto.arcgisonline.com/maps/USA\_Topo\_Maps. STV Incorporated, 2020.



**Table 2: Project Study Area Soils** 

Map Symbol	Map Unit Name	Rating
FrfC	Freehold loamy sand, 5 to 10 percent slopes	Non-hydric
FmhAt	Fluvaquents, loamy, 0 to 3 percent slopes, frequently flooded	Non-hydric
FrkD	Freehold sandy loam, 10 to 15 percent slopes	Non-hydric
FrkE	Freehold sandy loam, 15 to 25 percent slopes	Non-hydric
FrrB	Freehold-Urban land complex, 0 to 5 percent slopes	Non-hydric
FrkF	Freehold sandy loam, 25 to 40 percent slopes	Non-hydric
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	Hydric
FamA	Fallsington sandy loam, 0 to 2 percent slopes	Hydric
MamnAv	Mannington-Nanticoke complex, 0 to 1 percent slopes, very frequently flooded	Hydric
FrFB	Freehold loamy sand, 0 to 5 percent slopes	Non-hydric
BumA	Buddtown-Deptford complex, 0 to 2 percent slopes	Non-hydric
FrkB	Freehold sandy loam, 2 to 5 percent slopes	Non-hydric
FmhAt	Fluvaquents, loamy, 0 to 3 percent slopes, frequently flooded	Non-hydric
JdrA	Jade Run fine sandy loam, 0 to 2 percent slopes	Hydric
BumA	Buddtown-Deptford complex, 0 to 2 percent slopes	Non-hydric
FauB	Fallsington-Urban land complex, 0 to 5 percent slopes	Hydric
USSASB	Urban land-Sassafras complex, 0 to 5 percent slopes	Non-hydric
USAURB	Urban land-Aura complex, 0 to 5 percent slopes	Non-hydric
USWESB	Urban land-Westphalia complex, 0 to 5 percent slopes	Non-hydric

The NJDEP GeoWeb Freshwater Wetland Mapping (Figure 3, "New Jersey Wetlands Map") was reviewed and sixty-one mapped wetland areas were identified within the project study area. All of the areas were field verified. In some instances, mapped wetlands were not present, as they were previously developed or mapped incorrectly.

Review of the FEMA mapping (Figure 4, "FEMA Floodplain Map") revealed the project study area crosses fourteen 100-year floodplain areas.

Review of the NWI mapping (Figure 5, "NWI Wetlands Map") revealed that the project study area contains thirty-five NWI mapped wetland areas. All of the areas were field verified. In some instances, mapped wetlands were not present, as they were previously developed or mapped incorrectly.

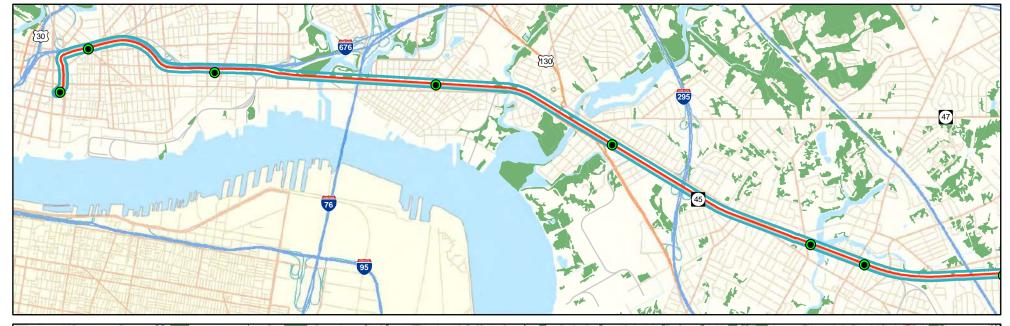
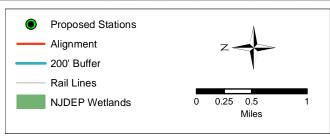




Figure 3: New Jersey Wetlands
Map





Source: NJDEP Wetlands, New Jersey Department of Environmental Protection (NJDEP), Office of Information Resource Management (OIRM), Bureau of Geographic Information and Analysis (BGIA) http://www.state.nj.us/dep/gis/wetshp.html. STV Incorporated, 2020.

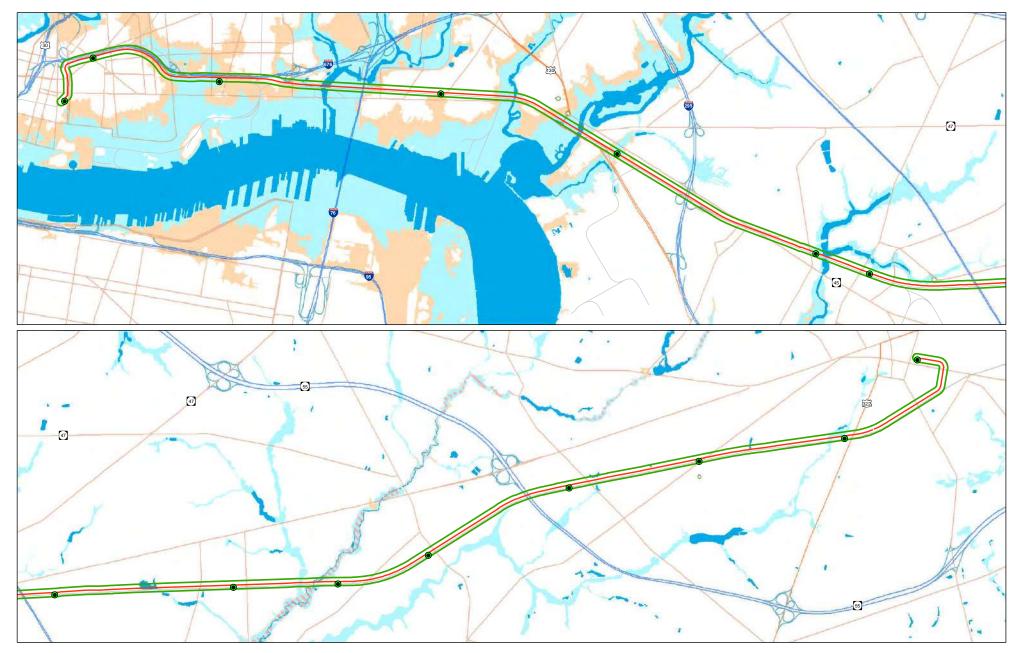
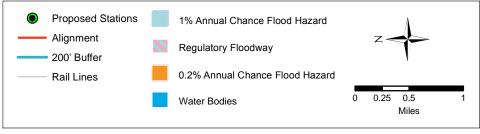


Figure 4: FEMA Floodplain Map





Source: FEMA, National Flood Hazard Layer (NFHL) Database https://hazards.fema.gov/femaportal/NFHL/ STV Incorporated, 2020.

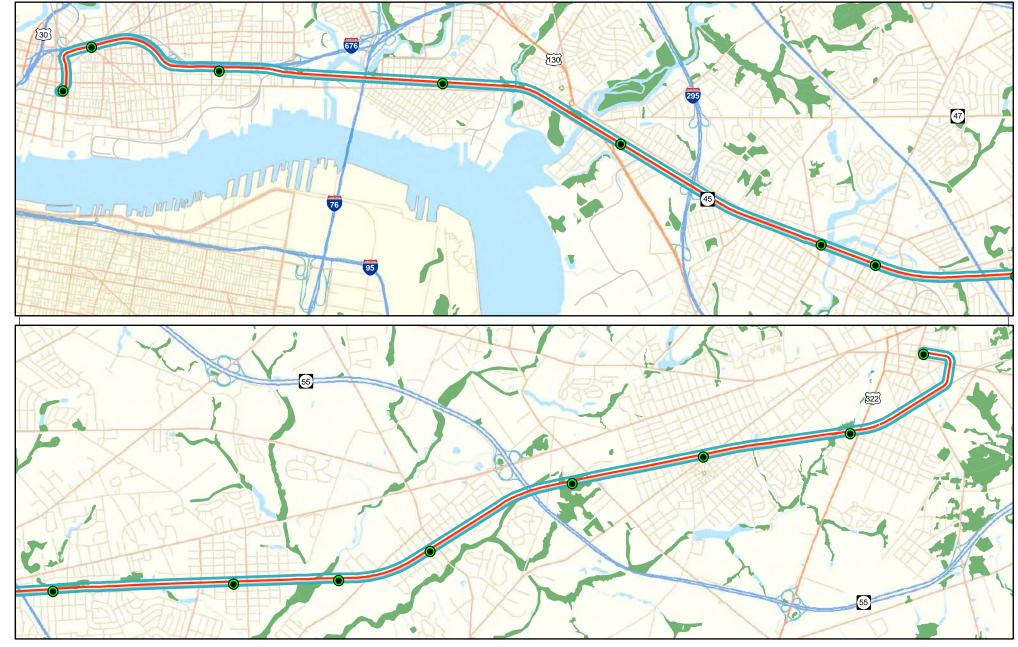
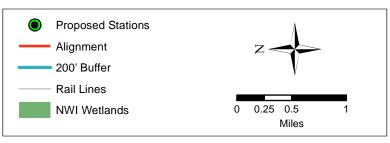


Figure 5: NWI Wetlands Map





Source: National Wetlands Inventory, U.S. Fish and Wildlife Service http://www.fws.gov/wetland/Data/Data-Download.html STV Incorporated, 2020.

#### 4.2 On-Site Findings

Thirty-two jurisdictional water resources were found within the project study area. They are described below:

- Resource 1, WGC-C/WCC-A, is a mapped New Jersey coastal wetland associated with, and includes, Newton Creek located in Gloucester City and Camden. The soil in this wetland is primarily muck. This area would be under the jurisdiction of both the USACE and NJDEP. This area also includes a non-tidal drainage ditch along the eastern side of the railroad in Gloucester City. As this would not be considered Waters of the U.S., the drainage ditch would be under the jurisdiction of the NJDEP only.
- Resource 2, WCC-B, is a non-tidal drainage ditch located along the western side of the railroad in Camden. As this would not be considered a Waters of the U.S., it would be under the jurisdiction of the NJDEP only.
- Resource 3, WGC-A/WBL-C, is a mapped New Jersey coastal wetland associated with, and includes, Little Timber Creek located in Gloucester City and Brooklawn. This area is classified as a NWI palustrine emergent (PEM) wetland. Hydrology in the wetland included surface water, soil saturation and high water table. Soils in the wetland have a redox dark surface. Dominant vegetation includes: purple loosestrife (Lythrum salicaria), spotted touch-me-not (Impatiens capensis) and Devil's-Darning-Needles (Clematis virginiana). This area would be under the jurisdiction of both the USACE and NJDEP.
- Resource 4, WGC-B is a mapped New Jersey coastal wetland in close proximity to Little Timber Creek
  and is located in Gloucester City. Hydrology in the wetland included surface water, soil saturation and
  high water table. The soil in this wetland is primarily muck. This area would be under the jurisdiction
  of both the USACE and NJDEP.
- Resource 5, WWV-A/WBL-A, is a mapped New Jersey coastal wetland associated with, and including,
  Big Timber Creek located in Westville and Brooklawn. This area is classified as a mapped New Jersey
  freshwater tidal marsh. Hydrology in this area includes surface water and soil saturation and the soil
  is muck. Dominant vegetation includes: green ash (Fraxinus pennsylvanica), purple loosestrife
  (Lythrum salicaria) and common reed (Phragmites australis). This area would be under the jurisdiction
  of both the USACE and NJDEP.
- Resource 6, WWV-B, is a freshwater emergent and scrub-shrub wetland located in Westville.
  Hydrology in this area includes saturated soils and the soil is primarily muck. Dominant vegetation
  includes: red osier dogwood (*Cornus alba*), skunk cabbage (*Symplocarpus foetidus*), arrowwood
  (*Viburnum dentatum*) and horsebrier (*Smilax rotundifolia*). Due to its proximity to tidal waters, this
  area would be under the jurisdiction of both the USACE and NJDEP.
- Resource 7, WBL-B, is freshwater emergent wetland located in Brooklawn. This area is a mapped NWI palustrine unconsolidated bottom (PUB) wetland. Hydrology includes surface water, saturation and high water table. Soils in the wetland have a dark surface. Dominant vegetation includes: red mulberry (Morus rubra), red osier dogwood (Cornus alba) and Japanese siltgrass (Microstegium vimineum). Due to its proximity to tidal waters, this area would be under the jurisdiction of both the USACE and NJDEP.

- Resource 8, WDP-D, is a freshwater scrub-shrub wetland located in Deptford Township. This area is classified as a mapped New Jersey deciduous scrub/shrub wetland. Hydrology in the wetland is soil saturation and the soil has a depleted matrix. Dominant vegetation includes: red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), Japanese knotweed (*Fallopia japonica*), black cherry (*Prunus serotina*), umbrella flatsedge (*Cyperus diandrus*) and pinkweed (*Persicaria pennsylvanica*). As this area is more than 1,000-feet from tidally-influenced waters, it would be under the jurisdiction of the NJDEP only.
- Resource 9, WWY-A, is Hunter Street Lake/Woodbury Creek, a state open water with a freshwater forested wetland fringe. It is located in Woodbury. Hydrology in the wetland is oxidized rhizospheres along living roots and the soil in the wetland has a redox dark surface. The dominant vegetation includes: black willow (Salix nigra), purple loosestrife (Lythrium salicaria) and common reed (Phragmites australis). As this area is more than 1,000-feet from tidally-influenced waters, it would be under the jurisdiction of the NJDEP only.
- Resource 10, WWH-A, is freshwater forested wetland located in Woodbury Heights and includes the area considered for a proposed Vehicle Maintenance Facility. The wetland is classified as a NWI palustrine forested (PFO) wetland and a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland is oxidized rhizospheres along living roots and the soil in the wetland is a depleted matrix. Dominant vegetation includes: tuliptree (Liriodendron tulipifera), red maple (Acer rubrum), multiflora rose (Rosa multiflora), spicebush (Lindera benzoin), Japanese honeysuckle (Lonicera japonica) and Virginia creeper (Parthenocissus quinquefolia). This area would be under the jurisdiction of the NJDEP only.
- Resource 11, WWH-B, is a non-tidal stormwater drainage ditch located in Woodbury Heights. This area would be under the jurisdiction of the NJDEP only.
- Resource 12, WDP-A, is a forested freshwater wetland associated with, and includes, an unnamed tributary to Mantua Creek located in Deptford Township. It is classified as a mapped New Jersey deciduous scrub/shrub wetland. Hydrology in this wetland includes soil saturation, water marks and oxidized rhizospheres along living roots and the soil has a depleted matrix. Dominant vegetation in the wetland includes: black willow (Salix nigra), brookside alder (Alnus serrulata), American elm (Ulmus americana) and swamp smartweed (Persicaria hydropiperoides). This area would be under the jurisdiction of the NJDEP only.
- Resource 13, WDP-B, is a forested freshwater wetland and non-tidal drainage ditch located in Deptford Township. Hydrology includes surface water and soil saturation and the soil has a dark redox surface. Dominant vegetation includes pin oak (*Quercus palustris*), tuliptree (*Liriodendron tulipifera*), white fringe tree (*Chionanthus virginicus*), sweet pepperbush (*Clethra alnifolia*) and low bush blueberry (*Vaccinium angustifolium*). This area would be under the jurisdiction of the NJDEP only.
- Resource 14, WDP-C, is Marlton Lake, a state open water with a freshwater forested wetland fringe.
   It is located in Deptford Township. This area is classified as a NWI PUB wetland and a mapped New Jersey deciduous scrub/shrub wetland. Hydrology in the wetland includes surface water, soil saturation and high water table. The soil in the wetland has a depleted matrix. Dominant vegetation

- includes: red maple (*Acer rubrum*), sweet pepperbush (*Clethra alnifolia*) and marginal wood fern (*Dryopteris marginalis*). This area would be under the jurisdiction of the NJDEP only.
- Resource 15, WWN-C, is a pond and considered a state open water with an emergent freshwater wetland fringe located in Wenonah Borough. The area is classified as a NWI PUB wetland. Hydrology in the wetland includes saturation and surface water and the soil has a depleted matrix. Dominant vegetation includes: red maple (Acer rubrum), sweet pepperbush (Clethra alnifolia), arrowwood (Viburnum dentatum), Japanese siltgrass (Microstegium vimineum) and pinkweed (Persicaria pensylvanica). This area would be under the jurisdiction of the NJDEP only.
- Resource 16, WMT-G/WWN-A, is a freshwater forested/scrub-shrub wetland located in Mantua Township and Deptford Township. The wetland is associated with, and includes, Mantua Creek. It is classified as a NWI PFO/PEM wetland and a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland includes surface water, high water table, saturation, oxidized rhizospheres along living roots and drainage patterns. Dominant vegetation in the wetland includes: red maple (Acer rubrum), green ash (Fraxinus pennsylvanica), arrowwood (Viburnum dentatum), eastern poison ivy (Toxicodendron radicans), horsebrier (Smilax rotundifolia) and swamp smartweed (Persicaria hydropiperoides). Soil in the wetland has a redox dark surface and depleted matrix. This area would be under the jurisdiction of the NJDEP only.
- Resource 17, WWN-B, is a freshwater forested wetland and a non-tidal drainage ditch located in Wenonah Borough and Deptford Township. The wetland is associated with, and includes, Monongahela Brook. It is classified as a NWI PFO/PEM wetland and a mapped New Jersey deciduous wooded wetland. Soil in the wetland has a dark redox surface and hydrology includes soil saturation. Vegetation in the wetland includes: red maple (Acer rubrum), green ash (Fraxinus pennsylvanica) and Virginia creeper (Parthenocissus quinquefolia). This area would be under the jurisdiction of the NJDEP only.
- Resource 18, WMT-E, is a non-tidal drainage ditch located in Mantua Township. This area would be under the jurisdiction of the NJDEP only.
- Resource 19, WMT-F, is a forested freshwater wetland located in Mantua Township. The wetland is associated with, and includes a tributary of Chestnut Branch and is a NWI PFO wetland. Hydrology in the wetland includes surface water, soil saturation and high water table and the soil within the wetland has a redox dark surface and muck. Dominant vegetation includes: red maple (Acer rubrum), tuliptree (Liriodendron tulipifera), common reed (Phragmites australis), stinging nettle (Urtica dioica), arrowwood (Viburnum dentatum), common winterberry (Ilex verticillata), swamp smartweed (Persicaria hydropiperoides) and Virginia creeper (Parthenocissus quinquefolia). This area would be under the jurisdiction of the NJDEP only.
- Resource 20, WMT-A, is a forested freshwater wetland located in Mantua Township. This wetland is classified as a NWI PFO wetland and a mapped New Jersey deciduous wooded wetland. Hydrology within the wetland includes oxidized rhizospheres along living roots and the presence of reduced iron. Dominant vegetation includes: red maple (*Acer rubrum*), sweet-gum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), devil's-pitchfork (*Bidens frondosa*) and sensitive fern (*Onoclea sensibilis*).

The soil within the wetland has a redox dark surface. This area would be under the jurisdiction of the NJDEP only.

- Resource 21, WMT-B, is a forested freshwater wetland located in Mantua Township. This wetland is classified as a NWI PFO wetland. Hydrology within the wetland includes saturation and oxidized rhizospheres along living roots. Dominant vegetation includes: red maple (*Acer rubrum*), American holly (*Ilex opaca*), spicebush (*Lindera benzoin*) and arrowwood (*Viburnum dentatum*), Virginia creeper (*Parthenocissus quinquefolia*), Asian bittersweet (*Celastrus orbiculatus*) and fox grape (*Vitis labrusca*). The soil within the wetland has a redox dark surface. This area would be under the jurisdiction of the NJDEP only.
- Resource 22, WMT-C, is a forested freshwater wetland located in Mantua Township. This wetland is classified as a NWI PFO wetland and a mapped New Jersey deciduous wooded wetland. Hydrology within the wetland includes oxidized rhizospheres along living roots and the soil has a redox dark surface. Dominant vegetation includes: red maple (Acer rubrum), American sycamore (Platanus occidentalis), pin oak (Quercus palustris), red osier dogwood (Cornus alba), pinkweed (Persicaria pensylvanica) and uptight sedge (Carex stricta). This area would be under the jurisdiction of the NJDEP only.
- Resource 23, WMT-D, is a forested freshwater wetland located in Mantua Township. The wetland is classified as a NWI palustrine forest/scrub shrub (PFO/SS) wetland and a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland includes saturated soils and the soil has a dark redox surface. Dominant vegetation includes: red maple (*Acer rubrum*), marsh primrose-willow (*Ludwigia palustris*) and swamp smartweed (*Persicaria hydropiperoides*). This area would be under the jurisdiction of the NJDEP only.
- Resource 24, WPT-C, is a freshwater forested/scrub-shrub wetland located in Pitman. It is classified
  as a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland includes surface
  water, saturation and drift deposits. The soil within the wetland is muck. Dominant vegetation
  includes: sweet-gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), great bladder sedge (*Carex intumescens*) and uptight sedge (*Carex stricta*). This area would be under the jurisdiction of the NJDEP
  only.
- Resource 25, WPT-D, is a forested freshwater wetland located in Pitman. The wetland is associated with, and includes, an unnamed tributary of Chestnut Branch. It is classified as a NWI PFO wetland and a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland is surface water and the soul has a depleted matrix. Dominant vegetation includes: red maple (*Acer rubrum*), sweet-gum (*Liquidambar styraciflua*), common reed (*Phragmites australis*) and lamp rush (*Juncus effuses*). This area would be under the jurisdiction of the NJDEP only.
- Resource 26, WPT-A, is Glen Lake, a state open water located in Pitman. This area would be under the jurisdiction of the NJDEP only.
- Resource 27, WPT-B, is a forested freshwater wetland located in Pitman. The wetland is associated
  with a tributary of Chestnut Branch. It is classified as a NWI PFO wetland and a mapped New Jersey
  deciduous wooded/herbaceous/phragmites dominant wetland. Hydrology in the wetland includes

surface water and saturation. The soil within the wetland has a redox dark surface. Dominant vegetation includes: Red maple (*Acer rubrum*), multiflora rose (*Rosa multiflora*), common winterberry (*Ilex verticillata*), skunk cabbage (*Symplocarpus foetidus*), spotted forget-me-not (*Impatiens capensis*) and eastern poison ivy (*Toxicodendron radicans*). This area would be under the jurisdiction of the NJDEP only.

- Resource 28, WGO-A, is Chestnut Branch, a state open water located in Glassboro. This area would be under the jurisdiction of the NJDEP only.
- Resource 29, WGO-B, is a non-tidal drainage ditch along the south side of the railroad located in Glassboro. This area would be under the jurisdiction of the NJDEP only.
- Resource 30, WGO-C, is a forested freshwater wetland with associated drainage ditches located in the area considered as a Vehicle Maintenance Facility in Glassboro. It is classified as a NWI PFO wetland and a mapped New Jersey deciduous wooded wetland. Hydrology in the wetland includes surface water, soil saturation, oxidized rhizospheres, drainage patterns and sphagnum moss. Dominant vegetation includes: red maple (*Acer rubrum*), sweet-gum (*Liquidambar styraciflua*), ash-leaf maple (*Acer negundo*), horsebrier (*Smilax rotundifolia*), twinsisters (*Lonicera tatarica*) red osier (*Cornus sericea*), lamp rush (*Juncus effusus*) and Japanese honeysuckle (*Lonicera japonica*). This area would be under the jurisdiction of the NJDEP only.
- Resource 31, WGO-D, is a forested freshwater wetland located in the area considered as a Vehicle Maintenance Facility in Glassboro. It is classified as a New Jersey mapped deciduous wooded wetland. Hydrology in the wetland includes surface water, high water table, saturated soil, moss trim lines and sphagnum moss. Dominant vegetation includes: red maple (*Acer rubrum*), pin oak (*Quercus palustris*), American holly (*Ilex opaca*), red osier (*Cornus sericea*), Northern spicebush (*Lindera benzoin*) and cinnamon fern (*Osmundastrum cinnamomeum*). This area would be under the jurisdiction of the NJDEP only.
- Resource 32, WGO-E, is an emergent freshwater wetland located in the area considered for the proposed Vehicle Maintenance Facility in Glassboro. Hydrology in the wetland includes surface water, high water table and saturated soil. Dominant vegetation includes: ash-leaf maple (*Acer negundo*), red maple (*Acer rubrum*), Allegheny blackberry (*Rubus allegheniensis*), common reed (*Phragmites australis*), spreading dogbane (*Apocynum androsaemifolium*) and lamp rush (*Juncus effuses*). This area would be under the jurisdiction of the NJDEP only.

Table 3, "Water Resources Summary," contains a detailed summary of each of the thirty-two resources identified within the project study area. Locations of the wetlands can be found in Appendix 2-A, "Water Resource Location Map." Datasheets for the wetland and upland points can be found in Appendix 2-B, Wetland Data Forms." Photographs of the resources are located in Appendix 2-C, "Photographs."

**Table 3: Water Resources Summary** 

Resource No.	Resource Name	Resource Type	Primary Hydric Soil Indicator	Hydrologic Indicators	Dominant Vegetation	Resource Size (within study area)
1	WGC-C/ WCC-A	Mapped Coastal Wetlands and Drainage Ditch	Muck	Newton Creek	N/A	7.00 acres
2	WCC-B	Drainage Ditch	N/A	N/A	N/A	0.15 acre
3	WGC-A\ WBL-C	Mapped Coastal Wetlands	Redox Dark Surface	Little Timber Creek Surface water, saturation, high water table	Lythrium salicaria Impatiens capensis Clematis virginiana	3.34 acre
4	WGC-B	Mapped Coastal Wetlands	Muck	Little Timber Creek	N/A	1.89 acres
5	WWV-A/ WBL-A	Mapped Coastal Wetlands	Muck	Big Timber Creek Surface Water, Soil Saturation	Fraxinus pennsylvanica Lythrium salicaria Phragmites australis	5.77 acres
6	WWV-B	Freshwater Wetland (Emergent/Scrub-Shrub)	Muck	Soil Saturation	Cornus alba Symplocarpus foetidus Viburnum dentatum Smilax rotundifolia	0.94 acres
7	WBL-B	Freshwater Wetland (Emergent)	Dark Surface	Surface water, saturation, high water table	Morus rubra Cornus alba Microstegium vimineum	0.97 acres
8	WDP-D	Freshwater Wetland (Scrub-Shrub)	Depleted Matrix	Soil Saturation	Acer rubrum Liquidambar styraciflua Fallopia japonica Prunus serotina Cyperus diandrus Persicaria pensylvanica	1.08 acre
9	WWY-A	State Open Water (Lake/Stream) with Freshwater Wetland Fringe (Forested)	Redox Dark Surface	Hunter Street Lake/Woodbury Creek Oxidized Rhizospheres along Living Roots	Salix nigra Lythrium salicaria Phragmites australis	3.81 acres
10	WWH-A	Freshwater Wetland (Forested)	Depleted matrix	Oxidized Rhizospheres along Living Roots	Liriodendron tulipifera Acer rubrum Rosa multiflora Lindera benzoin	4.60 acres

**Table 3: Wetland Resources Summary (continued)** 

Resource No.	Resource Name	Resource Type	Primary Hydric Soil Indicator	Hydrologic Indicators	Dominant Vegetation	Resource Size (within study area)
11	WWH-B	Drainage Ditch	N/A	N/A	N/A	0.06 acre
12	WDP-A	Freshwater Wetland (Forested)	Depleted matrix	Tributary of Mantua Creek High water table, Soil Saturation, Water Marks, Oxidized Rhizospheres along Living Roots	Salix nigra Alnus serrulata Ulmus americana Persicaria hydropiperoides	2.36 acres
13	WDP-B	Freshwater Wetland/Drainage ditch (Forested)	Redox Dark Surface	Surface Water, Soil Saturation	Quercus palustris Liriodendron tulipifera Chionanthus virginicus Clethra alnifolia Vaccinium angustifolium	0.06 acre
14	WDP-C	State Open Water (Lake) with Freshwater Wetland Fringe (Forested)	Depleted Matrix	Marlton Lake Surface Water, Soil Saturation, High Water Table	Acer rubrum Clethra alnifolia Dryopteris marginalis	5.37 acres
15	WWN-C	State Open Water (Pond) with Freshwater Wetland Fringe (Emergent)	Depleted Matrix	Surface Water, Soil Saturation	Acer rubrum Clethra alnifolia Viburnum dentatum Microstegium vimineum Persicaria penylvanica	0.07 acre
16	WMT-G/ WWN-A	Freshwater Wetland (Forested/Scrub-Shrub)	Redox Dark Surface, Depleted Matrix	Mantua Creek High Water Table, Surface Water, Soil Saturation, Oxidized Rhizospheres along Living Roots, Drainage Patterns	Acer rubrum Fraxinus pennsylvanica Viburnum dentatum Toxicodendron radicans Smilax rotundifolia Persicaria hydropiperoides	3.78 acres
17	WWN-B	Freshwater Wetland (Forested) and Drainage Ditch	Redox Dark Surface	Monongahela Brook Soil Saturation	Acer rubrum Fraxinus pennsylvanica Parthenocissus quinquefolia	1.41 acres
18	WMT-E	Drainage Ditch	N/A	N/A	N/A	0.02 acre

**Table 3: Wetland Resources Summary (continued)** 

Resource No.	Resource Name	Resource Type	Primary Hydric Soil Indicator	Hydrologic Indicators	Dominant Vegetation	Resource Size (within study area)
19	WMT-F	Freshwater Wetland (Forested)	Redox Dark Surface/muck	Chestnut Branch Tributary Surface Water, Soil Saturation, High Water Table	Acer rubrum Liriodendron tulipifera Phragmites australis Urtica dioica Viburnum dentatum Ilex verticillata Persicaria hydropiperoides Parthenocissus quinquefolia	1.83 acres
20	WMT-A	Freshwater Wetland (Forested)	Redox Dark Surface	Oxidized Rhizospheres along Living Roots, Presence of Reduced Iron	Acer rubrum Liquidambar styraciflua Ilex opaca Bidens frondosa Onoclea sensibilis	3.02 acres
21	WMT-B	Freshwater Wetland (Forested)	Redox Dark Surface	Soil Saturation, Oxidized Rhizospheres along Living Roots	Acer rubrum Ilex opaca Lindera benzoin Viburnum dentatum Parthenocissus quinquefolia Celastrus orbiculatus Vitis labrusca	0.22 acre
22	WMT-C	Freshwater Wetland (Forested)	Redox Dark Surface	Oxidized Rhizospheres along Living Roots	Acer rubrum Platanus occidentalis Quercus palustris Cornus alba Persicaria pensylvanica Carex stricta	0.86 acre

**Table 3: Wetland Resources Summary (continued)** 

Resource No.	Resource Name	Resource Type	Primary Hydric Soil Indicator	Hydrologic Indicators	Dominant Vegetation	Resource Size (within study area)
23	WMT-D	Freshwater Wetland (Forested)	Redox Dark Surface	Soil Saturation	Acer rubrum Ludwigia palustris Persicaria hydropiperoides	1.51 acres
24	WPT-C	Freshwater Wetland (Forested/Scrub-shrub)	Muck	Surface Water, Soil Saturation, Drift Deposits	Liquidambar styraciflua Acer rubrum Carex intumescens Carex stricta	0.71 acres
25	WPT-D	Freshwater Wetland (Forested/Scrub-Shrub)	Muck	Tributary of Chestnut Branch	Acer rubrum Liquidambar styraciflua Phragmites australis Juncus effusus	1.21 acre
26	WPT-A	State Open Water (Lake)	N/A	Glen Lake	N/A	0.25 acre
27	WPT-B	Freshwater Wetland (Forested)	Redox Dark Surface	Tributary of Chestnut Branch Surface Water, Soil Saturation	Acer rubrum Rosa multiflora Ilex verticillata Symplocarpus foetidus Impatiens capensis Toxicodendron radicans	0.25 acre
28	WGO-A	State Open Water (Stream)	N/A	Chestnut Branch	N/A	0.38 acre
29	WGO-B	Drainage Ditch	N/A	N/A	N/A	0.58 acre
30	WGO-C	Freshwater Forested Wetland	Redox Dark Surface	Surface Water, Saturation, Oxidized Rhizospheres, Drainage Patterns, Sphagnum Moss	Acer rubrum Liquidambar styraciflua Acer negundo Smilax rotundifolia Lonicera tatarica Cornus sericea Juncus effuses Lonicera japonica	2.88 acres

**Table 3: Wetland Resources Summary (continued)** 

Resource No.	Resource Name	Resource Type	Primary Hydric Soil Indicator	Hydrologic Indicators	Dominant Vegetation	Resource Size (within study area)
31	WGO-D	Freshwater Forested Wetland	Dark Surface	Surface Water, High Water Table, Saturation, Moss Trim Lines, Sphagnum Moss	Acer rubrum Quercus palustris Ilex opaca Cornus sericea Lindera benzoin Osmundastrum cinnamomeum	0.63 acre
32	WGO-E	Freshwater Emergent Wetland	Dark Surface	Surface Water, High Water Table, Saturation	Acer negundo Acer rubrum Rubus allegheniensis Phragmites australis Apocynum androsaemifolium Juncus effuses	0.29 acre

# **5 QUALIFICATION STATEMENT**

STV has prepared this wetland delineation report in accordance with applicable regulations and guidance documents. The wetland delineation was performed in accordance with the *Federal Manual* currently used by NJDEP and recognized by USACE. The wetland delineation and report were primarily completed by Michael Francis and Dorothy Daly with STV.

Dr. Francis is a Senior Environmental Project Manager with over 34 years of experience in environmental consulting and is experienced in managing a wide variety of environmental issues while working with environmental and engineering consulting firms, public entities and regulatory agencies. He has directed and supervised over 1,000 freshwater/coastal wetland delineations and preparation of Wetland Delineation Reports and multiple land use permit applications for submission to State and Federal agencies for public and private projects in New Jersey, New York, Pennsylvania, Delaware, Connecticut, Illinois, Tennessee and Texas.

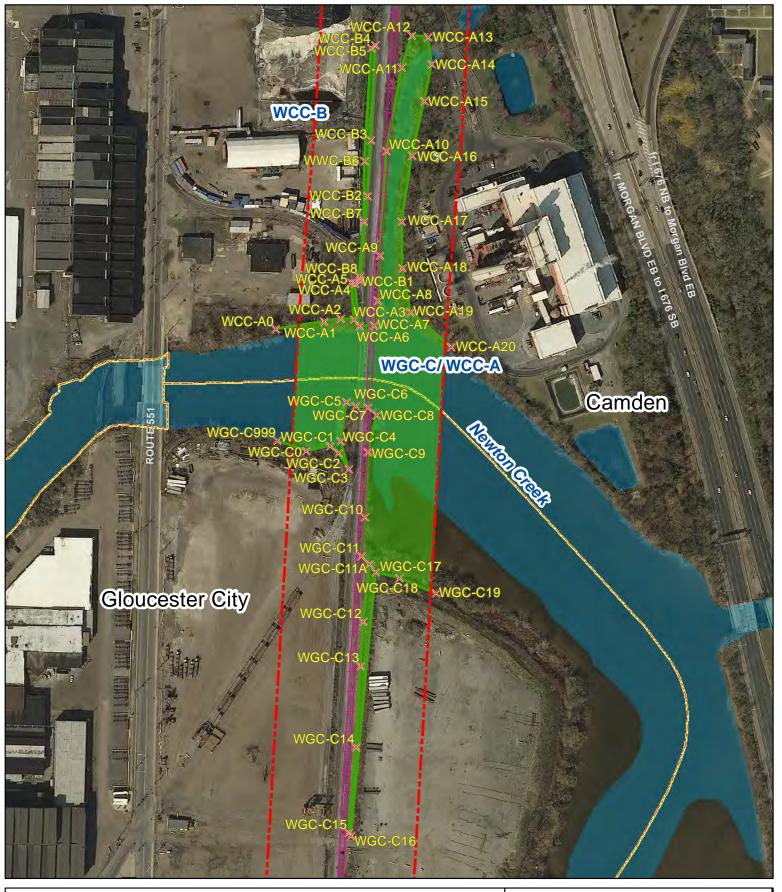
Ms. Daly has 23 years of planning, design and natural resources expertise garnered throughout the Mid-Atlantic area. Ms. Daly has completed the U.S. Army Corps of Engineers Wetland Delineation Training (1987 Manual) and has conducted wetland studies, prepared wetland reports and mitigation plans for resources in both the public and private sectors. She has prepared NEPA documentation and state and federal permits for pipeline and utility corridors, roadway widening, and bridge replacement projects. She has designed wetland replacement sites, roadside development plans and streetscapes, as well as prepared evaluations of forest species and impact mitigation and planting plans.

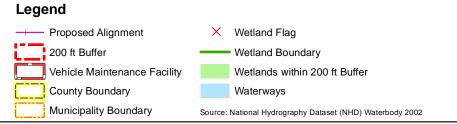
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- U.S. Fish & Wildlife Service, Online National Wetlands Inventory (http://www.fws.gov/wetlands/)

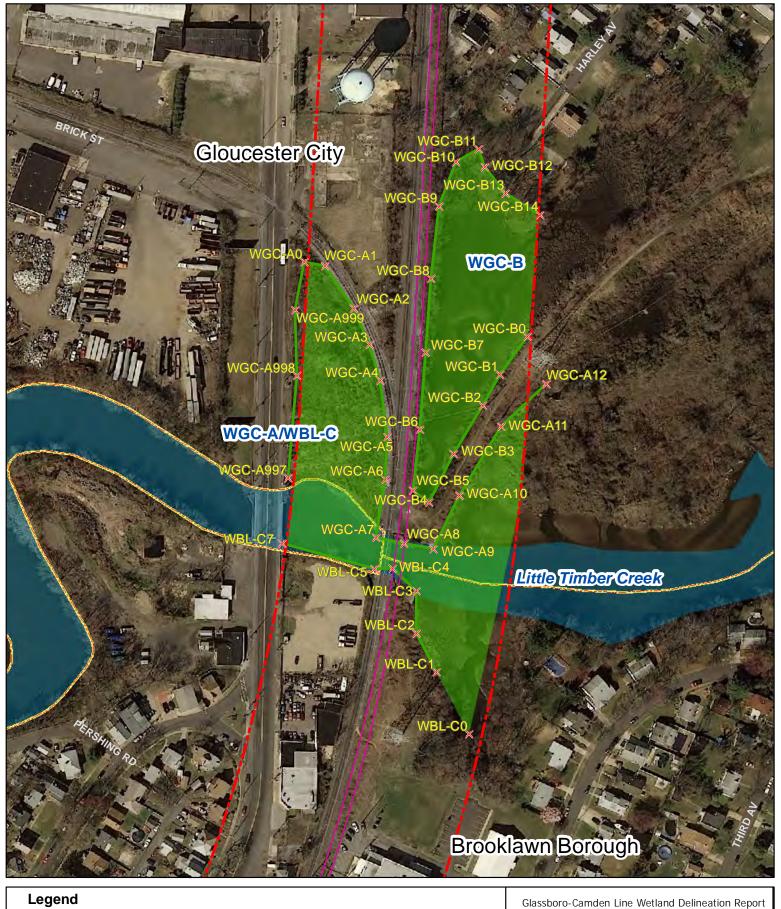
Attachment 2 – Wetland Delineation Technical Report	Glassboro-Camden Line EIS
Appendix 2-A: Water Resource Lo	ocation Map

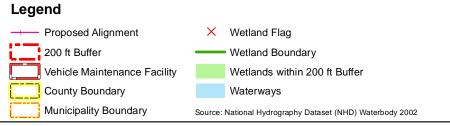




Glassboro-Camden Line Wetland Delineation Report
Water Resources Location Map





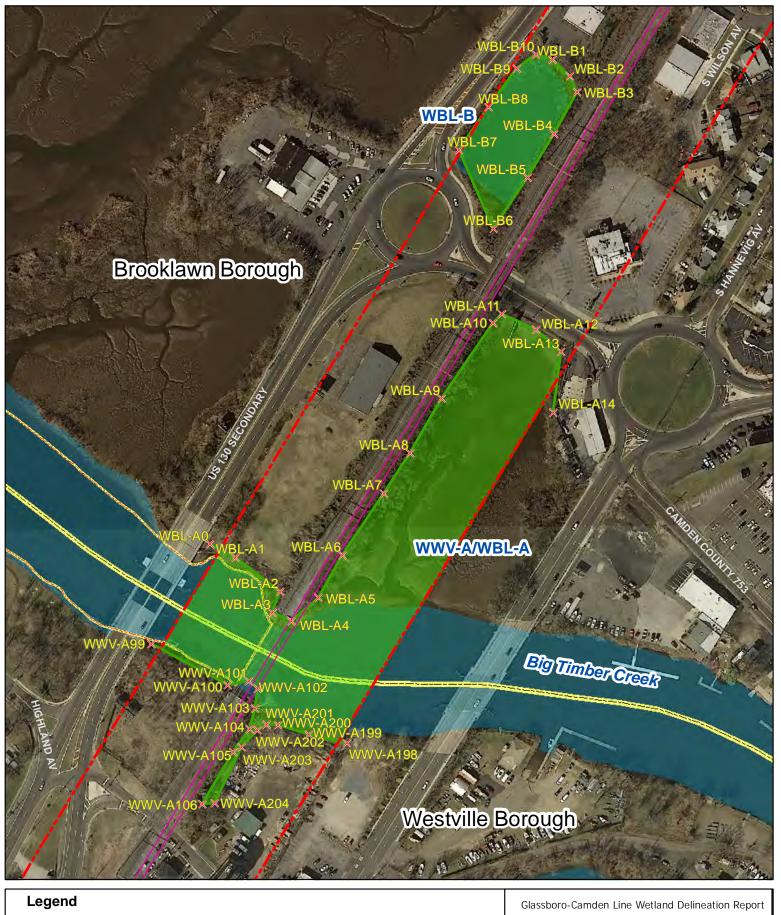


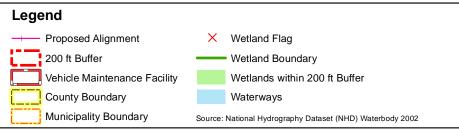
Water Resources Location Map

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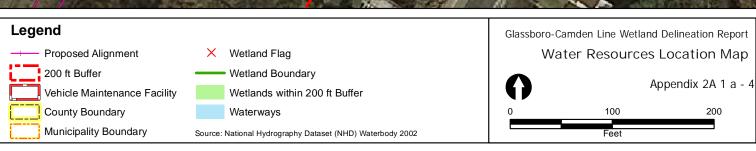


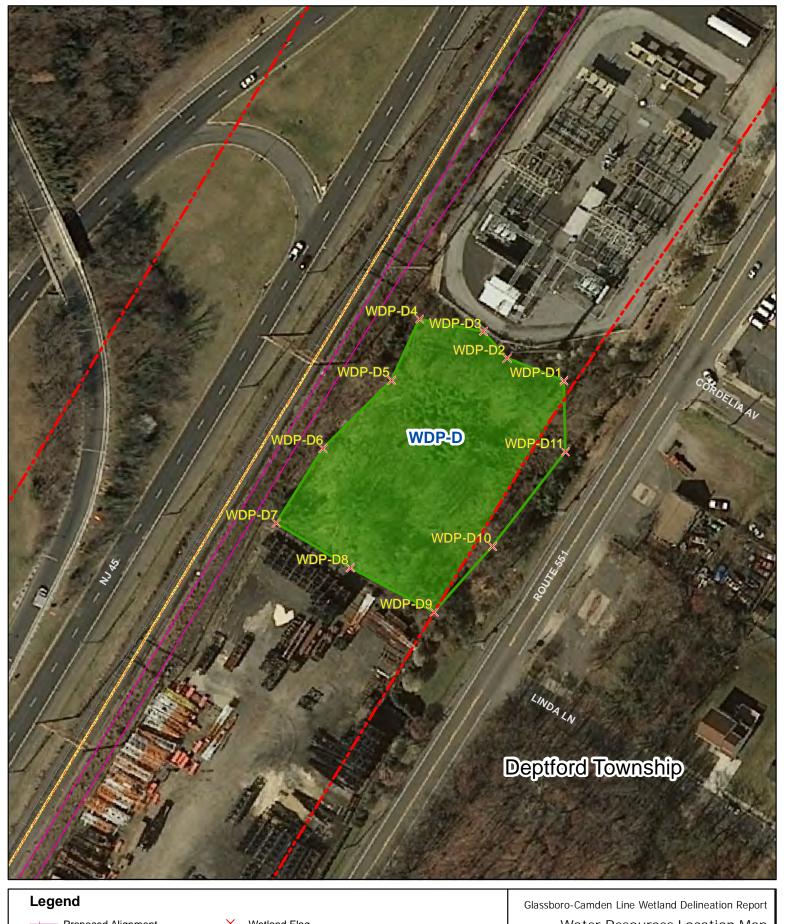
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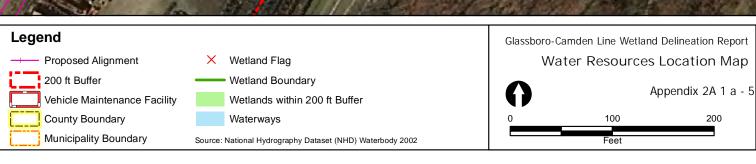
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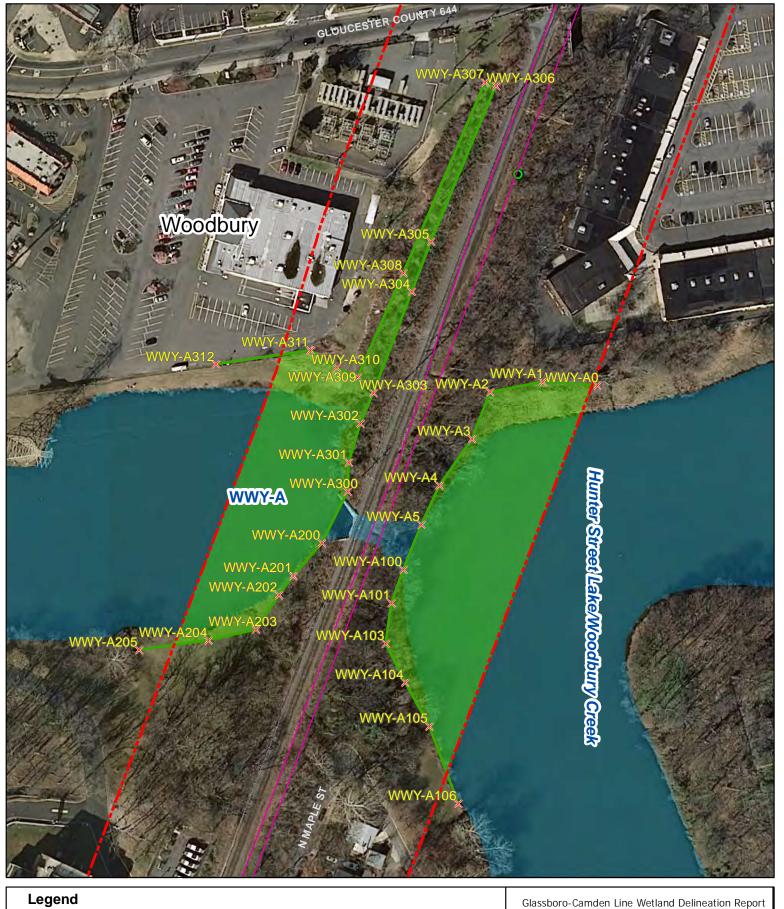
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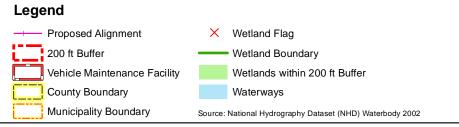


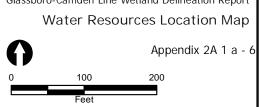




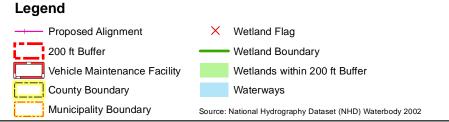










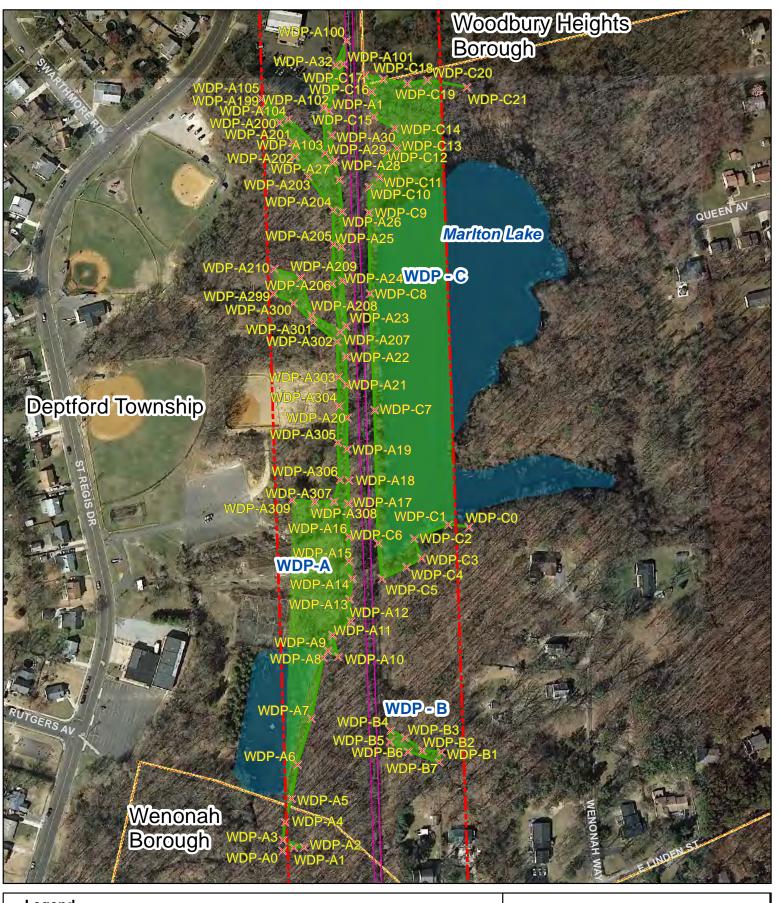


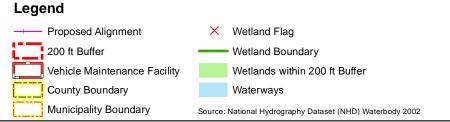
Glassboro-Camden Line Wetland Delineation Report
Water Resources Location Map

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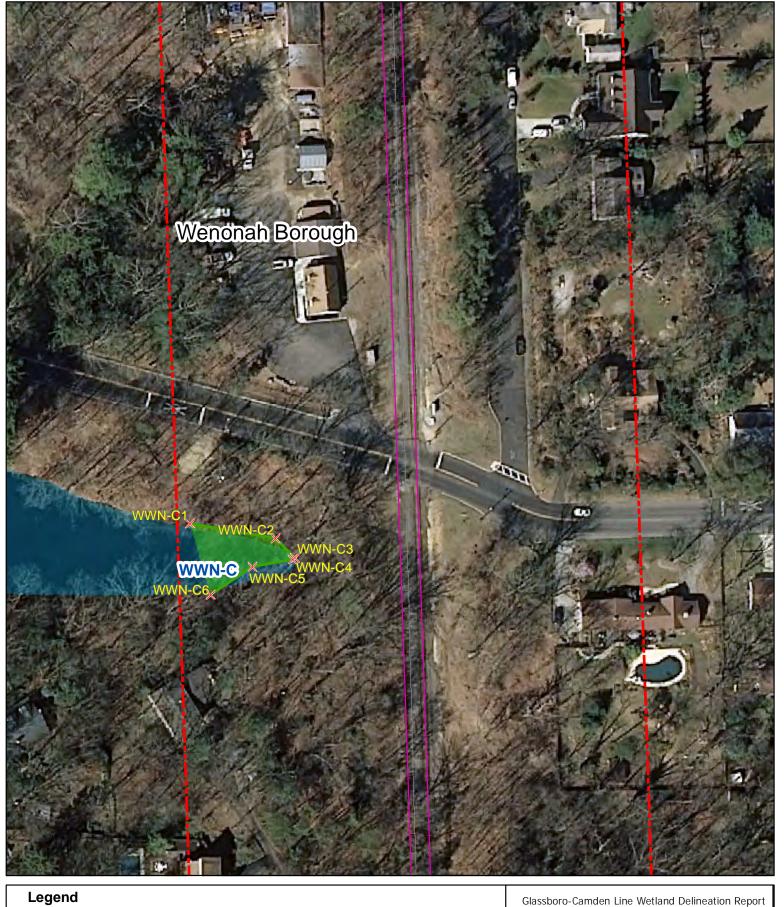


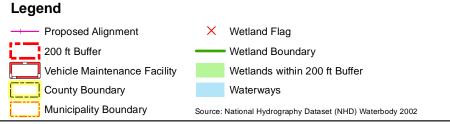


Glassboro-Camden Line Wetland Delineation Report
Water Resources Location Map

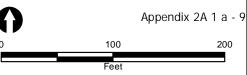
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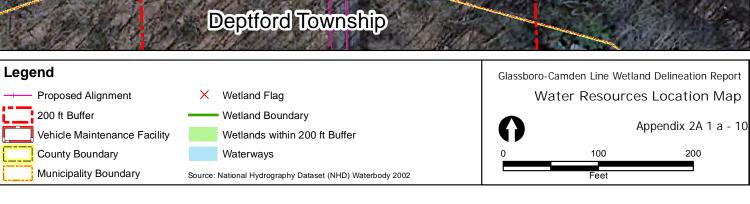


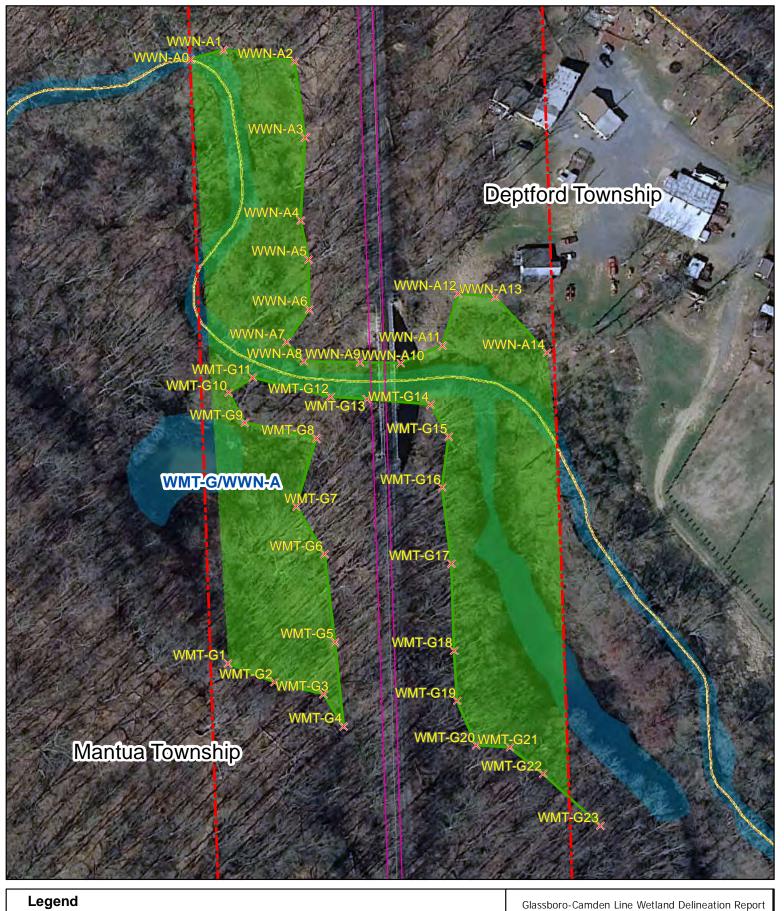


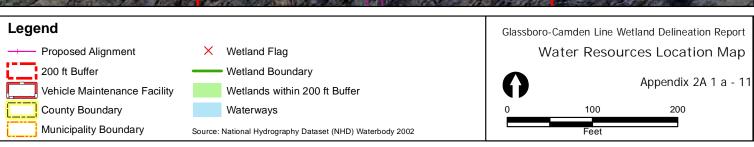
Glassboro-Camden Line Wetland Delineation Report
Water Resources Location Map

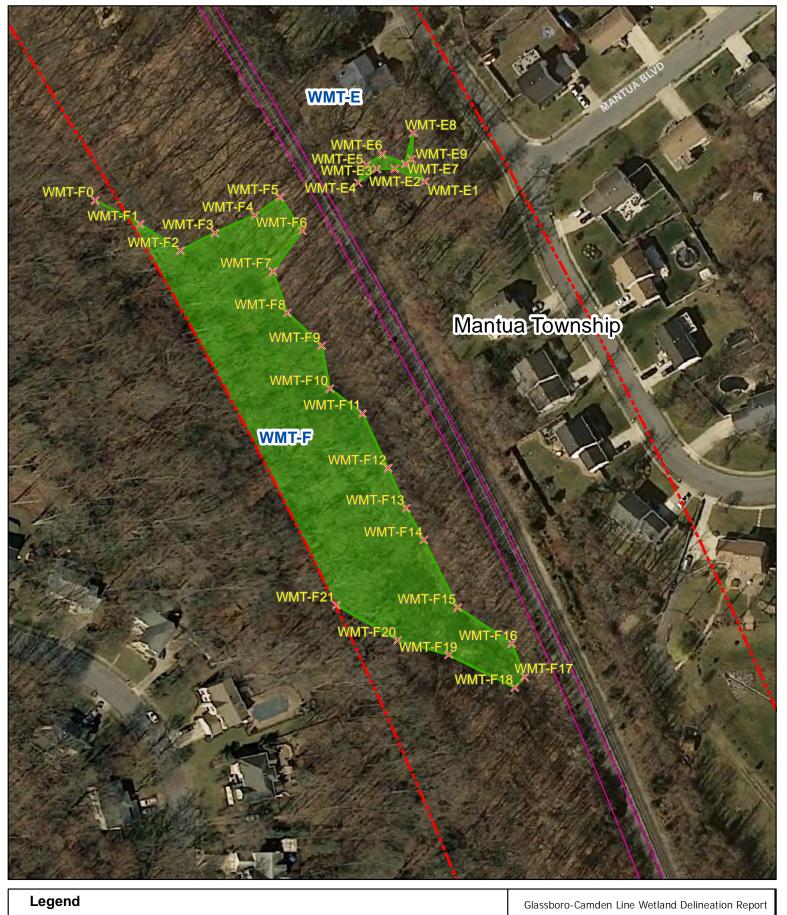


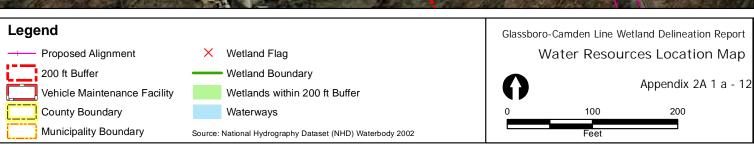


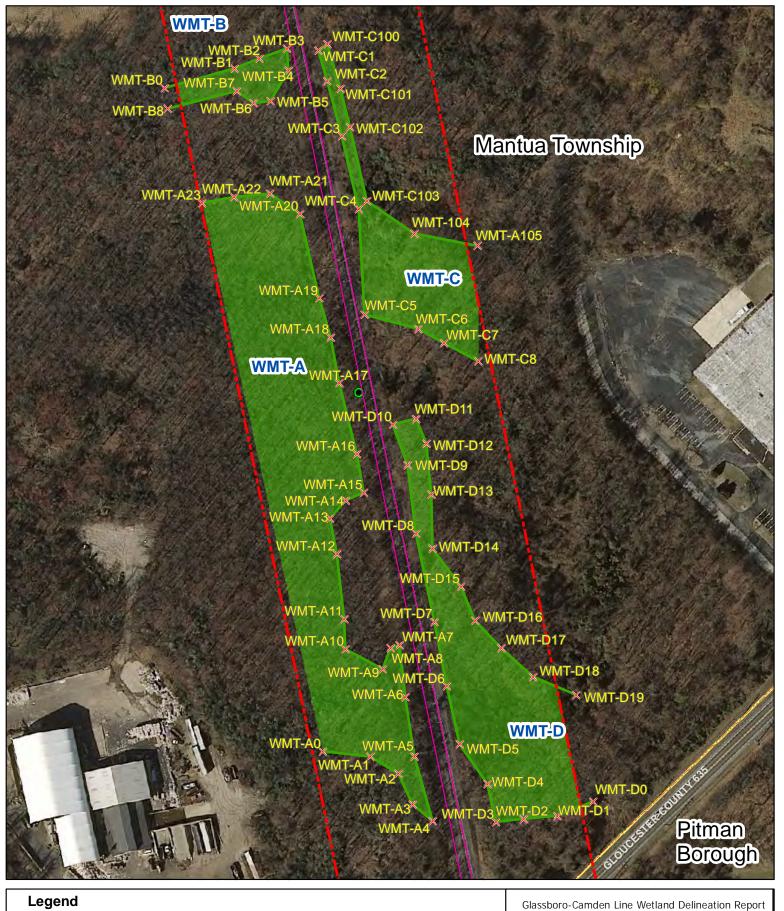


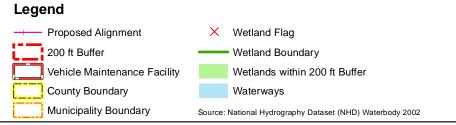












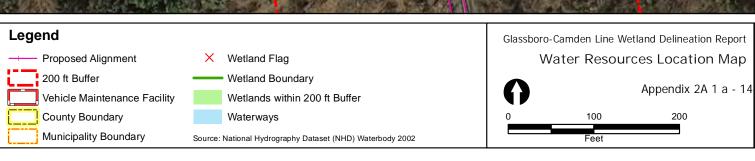
Water Resources Location Map

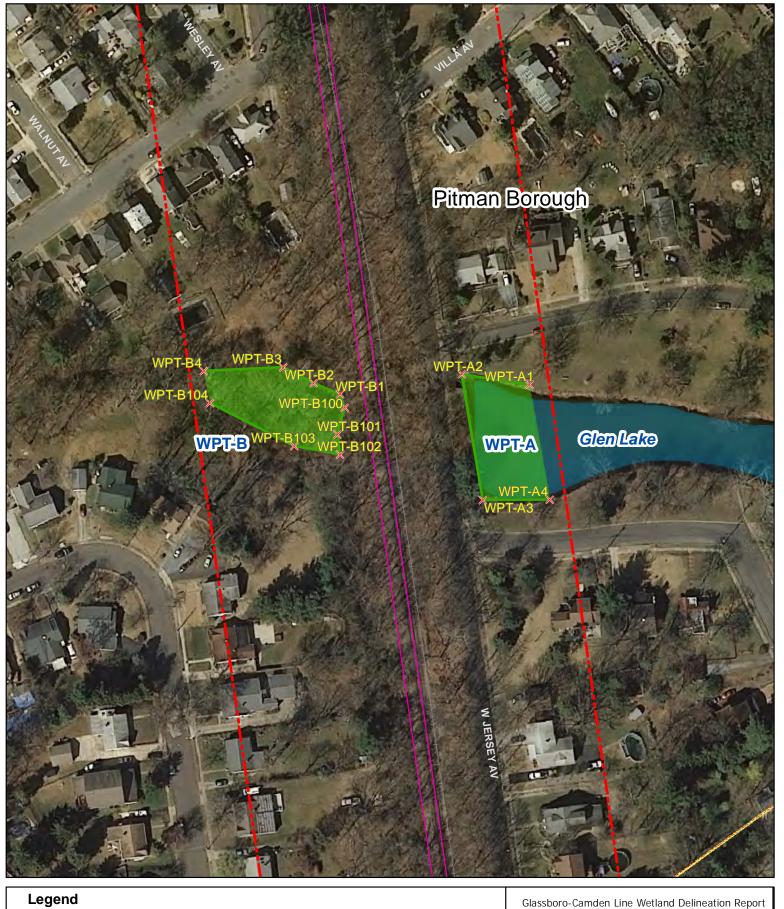
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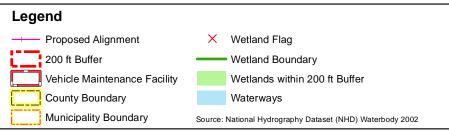
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Feet







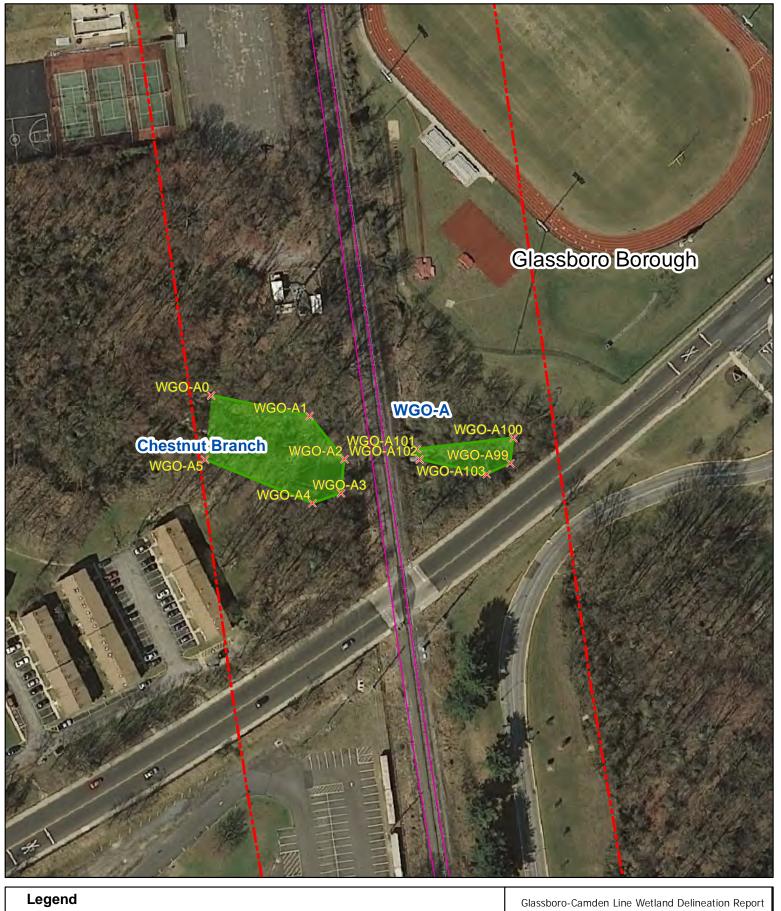


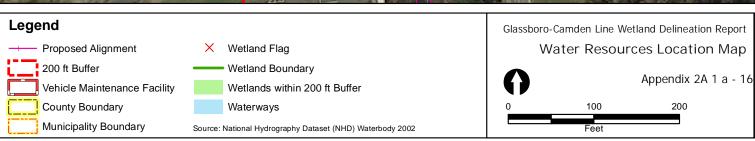
Water Resources Location Map

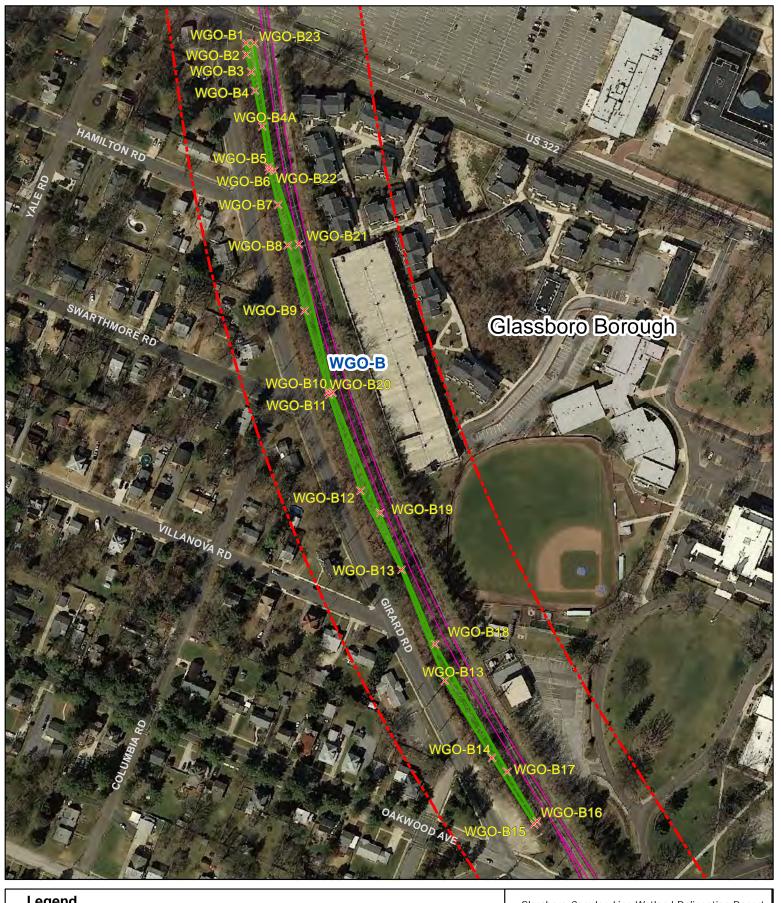
Appendix 2A 1 a - 15

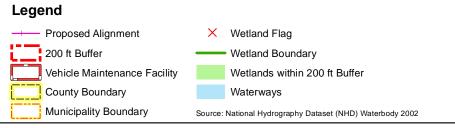
100 200

Feet







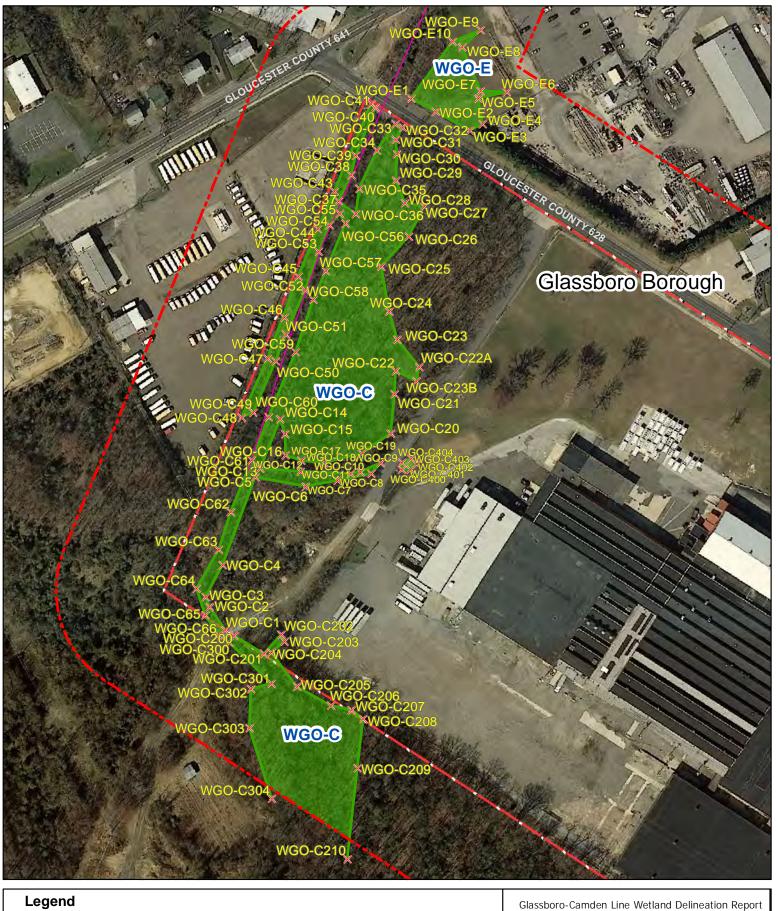


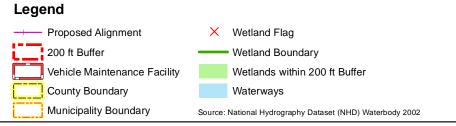
Glassboro-Camden Line Wetland Delineation Report
Water Resources Location Map

Appendix 2A 1 a - 17

10 100 200

Feet

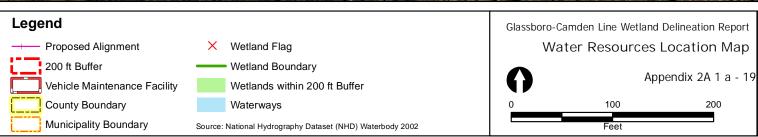




Water Resources Location Map

Appendix 2A 1 a - 18





Attachment 2 –	Wetland	Delineation	Technical Report	
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Glassboro-Camden Line EIS

**Appendix 2-B: Wetlands Data Forms** 

Project/Site: Glassboro-Camder	n L <b>i</b> ne	City/C	<sub>tountv:</sub> Camden		Sampling Date:	9/20/13
Applicant/Owner: DRPA/NJT				State: NJ		
Investigator(s): DD, MF		Section	on, Township, Range		Camping Comm	
1 df (l-:  -		1 1		concave	Slor	ne (%). 0-2%
Subregion (LRR or MLRA). MLRA	. 149 <b>A</b>	20001 Lat: 39°52'57.8	2"N Long	,. 75° 7'10.66"W	Olor	atum. NAD 1983
Subregion (LRR or MLRA): MLRA Soil Map Unit Name: Urban land		Lat	LON	JNWI classific	eation: PEM1/R	
Are climatic / hydrologic conditions	on the site typical fo	or this time of year? V	es X No	(If no explain in R	emarks )	
Are Vegetation, Soil				(ii no, explain iii iv mal Circumstances" p		No
<del>-</del>				-		NO
Are Vegetation, Soil				d, explain any answe		
SUMMARY OF FINDINGS -	- Attach site m	ap showing sam	ipling point loca	itions, transects	, important fo	eatures, etc.
Hydrophytic Vegetation Present?	Yes X	_ No	Is the Sampled Are	22		
Hydric Soil Present? Wetland Hydrology Present?	Yes X	_ No	within a Wetland?		No	
	Yes <u>X</u>	_ No		.00		_
Remarks:						
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	itors (minimum of	f two required)
Primary Indicators (minimum of o	ne is required; chec	k all that apply)		Surface Soil	•	
Surface Water (A1)		uatic Fauna (B13)		_	getated Concave	Surface (B8)
High Water Table (A2)	☐ Ma	rl Deposits (B15) <b>(LRF</b>	R U)	Drainage Pa	tterns (B10)	
Saturation (A3)		drogen Sulfide Odor (0		Moss Trim L		
Water Marks (B1)		dized Rhizospheres a			Water Table (C2)	)
Sediment Deposits (B2)		sence of Reduced Iro	, ,	Crayfish Bur		
Drift Deposits (B3) Algal Mat or Crust (B4)		cent Iron Reduction in Muck Surface (C7)	Tilled Soils (Co)		isible on Aerial Im Position (D2)	lagery (C9)
Iron Deposits (B5)		ner (Explain in Remark	(s)	Shallow Agu		
Inundation Visible on Aerial I		(	,	FAC-Neutral	` ,	
Water-Stained Leaves (B9)	,			_	noss (D8) <b>(LRR T</b>	ī, U)
Field Observations:						
		Depth (inches): to s				
		Depth (inches): to si			Y	
(includes capillary fringe)		Depth (inches): to si		ıd Hydrology Preser	it? Yes <u>^</u>	
Describe Recorded Data (stream	gauge, monitoring v	vell, aerial photos, pre	vious inspections), if	available:		
Remarks:						
Tidal mud flat						

			Sampling Point: WGC-A/B W
	Dominant		Dominance Test worksheet:
	Species?		Number of Dominant Species That Are OBL_FACW_or FAC: 3 (A)
			That Are OBL, FACW, or FAC: 3 (A)
			Total Number of Dominant Species Across All Strata: 3 (B)
			Species Across All Strata: 3 (B)
			Percent of Dominant Species That Are ORL FACW or FAC: 100% (A/R)
			That Are OBL, FACW, or FAC: 100% (A/B)
			Prevalence Index worksheet:
			Total % Cover of: Multiply by:
0	= Total Cov	er	OBL species <u>75</u> x 1 = <u>75</u>
			FACW species 20 x 2 = 40
2070 01	total cover.		FAC species 50 x 3 = 150
			FACU species $\frac{20}{x}$ $x = \frac{80}{x}$
			UPL species $0 \times 5 = 0$
			Column Totals: <u>165</u> (A) <u>345</u> (B)
			Prevalence Index = B/A = 2.0
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
			✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
	= Total Cov	er	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			Troblematic Hydrophytic Vegetation (Explain)
_			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
75	Υ	OBL	be present, unless disturbed or problematic.
20	Υ	FACW	Definitions of Four Vegetation Strata:
			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
			more in diameter at breast height (DBH), regardless of
			height.
			Sapling/Shrub – Woody plants, excluding vines, less
			than 3 in. DBH and greater than 3.28 ft (1 m) tall.
			Herb – All herbaceous (non-woody) plants, regardless
			of size, and woody plants less than 3.28 ft tall.
			Woody vine – All woody vines greater than 3.28 ft in
			height.
20% of	total cover:	19	
	<u>Y</u>		
	<u>N</u>	FACU	
70			Hydrophytic
	= Total Cov		Vegetation Present? Yes X No
20% of			Present? Yes No
	0 20% of 75 20 95 20% of 50 20	0 = Total Coverse	0 = Total Cover 20% of total cover:  0 = Total Cover 20% of total cover:  75 Y OBL 20 Y FACW  95 = Total Cover 20% of total cover:  19  50 Y FAC 20 N FACU

SOIL Sampling Point: WGC-A/B W

Profile Desc	cription: (Describe	to the depth	needed to docur	nent the	indicator	or confirm	n the absence	of indicate	ors.)	
Depth	Matrix Color (moist)	<del></del> _	Redo Color (moist)	x Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
(inches) 0-12	10YR 3/1		10YR 4/6	10	C C	PL	SIL	muck	Remarks	
12-20	10 YR 3/1	100				. —	SL	muck wit	h araval	-
12-20	10 111 3/1						<u>JL</u>	THUCK WIL	ii giavei	
	-				<del></del>					
<sup>1</sup> Type: C=C	oncentration, D=De	oletion. RM=F	Reduced Matrix, MS	S=Masked	d Sand Gi	ains.	<sup>2</sup> Location:	PL=Pore L	ining, M=Matri	x.
	Indicators: (Appli								matic Hydric	
☐ Histosol	(A1)		□ Polyvalue Be	low Surfa	ice (S8) <b>(I</b>	RR S, T, L	J) 🔲 1 cm i	Muck (A9) <b>(L</b>	RR O)	
Histic E	oipedon (A2)		Thin Dark Su	•				Muck (A10)		
	stic (A3)		Loamy Muck	-		R O)		•	, .	/ILRA 150A,B)
	en Sulfide (A4)		Loamy Gleye		(F2)			•	ain Soils (F19)	
	d Layers (A5) Bodies (A6) <b>(LRR F</b>	P T U)	☐ Depleted Ma  Redox Dark		<del>-</del> 6)			alous Bright RA 153B)	Loamy Soils (	F20)
	ıcky Mineral (A7) <b>(L</b>		Depleted Dai	`	,			Parent Mater	ial (TF2)	
	esence (A8) (LRR I		Redox Depre				☐ Very S	Shallow Darl	c Surface (TF1	2)
=	ıck (A9) <b>(LRR P, T)</b>		Marl (F10) <b>(L</b>	-			U Other	(Explain in f	Remarks)	
	d Below Dark Surfac	ce (A11)	Depleted Ocl	. ,	•	•	T) 31m al:		drophytic vege	estion and
=	ark Surface (A12) rairie Redox (A16) <b>(</b>	MLRA 150A)	=		, ,	•	-	-	ogy must be pi	
=	lucky Mineral (S1) (	-	Delta Ochric		-	, -,		-	ed or problema	
_	Gleyed Matrix (S4)	· •	Reduced Ver		-	50A, 150B)	)			
	Redox (S5)		Piedmont Flo							
_	Matrix (S6) rface (S7) <b>(LRR P,</b> :	C T II)	Anomalous E	Bright Loa	my Soils (	(F20) <b>(MLR</b>	RA 149A, 1530	C, 153D)		
	Layer (if observed)									
Type: No		-								
Depth (in			<u></u>				Hydric Soi	l Present?	Yes X	No
Remarks:		مامامات								_
P	ure muck floc	oapiain								

Project/Site: Glassboro-Camde	n LIne	Citv/C	<sub>ounty:</sub> Camden		Sampling Date:	9/20/13
Applicant/Owner: DRPA/NJT				State: NJ		
Investigator(s): DD, MF		Section	n, Township, Range: <u>(</u>		Camping Com	-
Landform (hillslope, terrace, etc.):	Floodplain		relief (concave, convex		Slo	ne (%). 0-2%
Subregion (LRR or MLRA): MLRA	A 149A		"N Long:			
Soil Map Unit Name: Urban land		Lat	Long	NWI classific	ation: N/A	
Are climatic / hydrologic conditions		or this time of year? V				
				al Circumstances" p		No
Are Vegetation, Soil				•		NO
Are Vegetation, Soil				explain any answe	,	
SUMMARY OF FINDINGS	<ul> <li>Attach site m</li> </ul>	ap showing sam	pling point locati	ons, transects	, important f	eatures, etc.
Hydrophytic Vegetation Present?	Yes	No X	In the Committed Asses			
Hydric Soil Present?	Yes	No X	Is the Sampled Area within a Wetland?		No X	
Wetland Hydrology Present?	Yes	No X No X	within a wettand?	165	NO	_
Remarks:						
HYDROLOGY				C	4 (:-:	£ 6
Wetland Hydrology Indicators:  Primary Indicators (minimum of c		( all that apply)		Secondary Indica  Surface Soil	•	r two requirea)
Surface Water (A1)		uatic Fauna (B13)		_	getated Concave	Surface (B8)
High Water Table (A2)		rl Deposits (B15) <b>(LRF</b>	R U)	Drainage Pa	=	Carrace (Bo)
Saturation (A3)		drogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)	Oxi	dized Rhizospheres al	long Living Roots (C3)	Dry-Season	Water Table (C2)	)
Sediment Deposits (B2)	Pre	sence of Reduced Iror	n (C4)	Crayfish Bur	rows (C8)	
Drift Deposits (B3)		cent Iron Reduction in	Tilled Soils (C6)		isible on Aerial In	nagery (C9)
Algal Mat or Crust (B4)		n Muck Surface (C7)		_	Position (D2)	
☐ Iron Deposits (B5)☐ Inundation Visible on Aerial I		er (Explain in Remark	s)		` ,	
Water-Stained Leaves (B9)	magery (b1)				nest (D3) noss (D8) <b>(LRR 1</b>	r. U)
Field Observations:				<u></u>		, -,
Surface Water Present? Y	es No X	Depth (inches):				
		Depth (inches):				
	es No X	Depth (inches):	Wetland	Hydrology Preser	nt? Yes	No_X
(includes capillary fringe)  Describe Recorded Data (stream	gauge, monitoring w	vell, aerial photos, prev	l vious inspections), if av	ailable:		
Remarks:						

GETATION (Four Strata	ı) – Use scientific na	mes of pl	ants.		Sampling Point: WGC-A/I	3 U
001			Dominant		Dominance Test worksheet:	
ree Stratum (Plot size: 30'	·		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A	)
					Total Number of Dominant	
					Species Across All Strata: 4 (B	)
					Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A	/R)
					That 7 is 0 52, 17 (0 17 ) (7 )	٥,
					Prevalence Index worksheet:	
					Total % Cover of: Multiply by:	
			= Total Cov	er	OBL species 0 x 1 = 0	
!	50% of total cover:				FACW species $0 \times 2 = 0$	
apling/Shrub Stratum (Plot size	·		10101	·	FAC species $\frac{70}{}$ x 3 = $\frac{210}{}$	
Robinia pseudoacacia	,	25	Υ	UPL	FACU species <u>75</u> x 4 = <u>300</u>	
		. ——			UPL species <u>25</u> x 5 = <u>125</u>	
					Column Totals: <u>170</u> (A) <u>635</u> (	3)
					Prevalence Index = B/A = 3.7	
					Hydrophytic Vegetation Indicators:	
					1 - Rapid Test for Hydrophytic Vegetation	
					2 - Dominance Test is >50%	
			= Total Cov		3 - Prevalence Index is ≤3.0 <sup>1</sup>	
1	50% of total cover: 12.5				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
	50% of total cover	20% 01	total cover	• ——		
erb Stratum (Plot size: 5' Ambrosia artemisiifolia	)	45	Υ	FACU	¹Indicators of hydric soil and wetland hydrology mus	:
Digitaria serotina		40	<u>'</u>	FAC	be present, unless disturbed or problematic.	
			<u>'</u>		Definitions of Four Vegetation Strata:	
Solidago canadensis		30	<u> </u>	FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm)	or
Lonicera japonica		30		FAC	more in diameter at breast height (DBH), regardless	of
-					height.	
		- ——			Sapling/Shrub – Woody plants, excluding vines, les	s
					than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
					Herb – All herbaceous (non-woody) plants, regardle	SS
					of size, and woody plants less than 3.28 ft tall.	
)					Woody vine – All woody vines greater than 3.28 ft in	ı
. <u> </u>					height.	
2						
		145	= Total Cov	er er		
;	50% of total cover: <u>72.5</u>	20% of	total cover	29		
oody Vine Stratum (Plot size:	15' )					
		_				
					Hydrophytic	
		^	= Total Cov	er	Vegetation	
!	50% of total cover:	20% of	total cover	:	Present? Yes No _X	
emarks: (If observed, list morpl	50% of total cover: hological adaptations belo		total cover	:	100	
amarks. (III observed, list morpi	iological auaptations beid	лvv ).				

SOIL Sampling Point: WGC-A/B U

Profile Desc	ription: (Describe	to the depth	needed to docu	ment the in	dicator o	or confirm	the absence	of indicate	ors.)	
Depth	Matrix			x Features					_	
(inches)	Color (moist)		Color (moist)		Type¹	Loc <sup>2</sup>	<u>Texture</u>		Remarks	
0-12	10YR 2/1	100					SIL	dry		
										_
·										
1Type: C=C	oncentration, D=De	oletion PM-P	educed Matrix M	S=Macked 9	Sand Gra	ine	<sup>2</sup> Location:	DI -Doro I	ining, M=Matr	iv
	Indicators: (Appli								matic Hydric	
Histosol		, a a a a a a a a a a a a a a a a a a a	Polyvalue B		-	RRSTI		Лиск (А9) <b>(I</b>	-	
	oipedon (A2)		Thin Dark S				_	миск (дэ) <b>(.</b> Muck (А10)	•	
<b> </b>	stic (A3)		Loamy Muck							MLRA 150A,B)
	en Sulfide (A4)		Loamy Gley			Ο,		•	, ,	(LRR P, S, T)
	d Layers (A5)		Depleted Ma	•	_,			-	Loamy Soils	
_	Bodies (A6) (LRR F	P, T, U)	Redox Dark		5)			RA 153B)	,	(* = - )
=	ıcky Mineral (A7) <b>(L</b>		Depleted Da					arent Mater	ial (TF2)	
☐ Muck Pr	esence (A8) (LRR I	J)	Redox Depr	essions (F8)	)		<u>□</u> Very S	Shallow Darl	k Surface (TF	12)
1 cm Μι	ıck (A9) <b>(LRR P, T)</b>		Marl (F10) (I	LRR U)			U Other	(Explain in l	Remarks)	
Deplete	d Below Dark Surfac	ce (A11)	Depleted Oc	hric (F11) <b>(I</b>	MLRA 15	51)				
<b>=</b>	ark Surface (A12)		☐ Iron-Mangar				-	_	drophytic vege	
=	rairie Redox (A16) <b>(</b>	-	Umbric Surfa			U)		-	ogy must be p	
_	lucky Mineral (S1) (	LRR O, S)	Delta Ochric		-			ess disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
	Redox (S5)		Piedmont Fl					450D)		
	Matrix (S6)	C T II)	Anomalous I	Bright Loam	y Soils (F	·20) (MLR	A 149A, 153C	, 153D)		
	rface (S7) (LRR P, Layer (if observed)						1			
Type: No		•								
1	ches):		<u>—</u>				Hydric Soil	Drocont?	Yes	No X
	Ulles)						Hyuric 30ii	rieseiiti	165	. 110
Remarks:										

Project/Site: Glassboro-Camd	en LIne	City/C	ounty: Gloucester		Sampling Date:	9/19/2013
Applicant/Owner: DRPA/NJT				State: NJ		
Investigator(s): DD, MF		Section	on, Township, Range:		1 0	
Landform (hillslope, terrace, etc.)	: Terrace		relief (concave, conve		) Slo	pe (%):
Subregion (LRR or MLRA): MLF	RA 149A	 Lat: 39°52'26.1	2"N Long	75° 7'32.51"W		atum: NAD 1983
Subregion (LRR or MLRA): MLF Soil Map Unit Name: Urban lan	d-Downer complex,	0 to 5 percent slop	oes	NWI classific	cation: PEM1/R	
Are climatic / hydrologic condition						
Are Vegetation, Soil				– ` nal Circumstances" բ		No
Are Vegetation, Soil				I, explain any answe		,,,,
SUMMARY OF FINDINGS						eatures, etc.
Hydrophytic Vegetation Present	ya X	No				
Hydric Soil Present?	Yes X	No No	Is the Sampled Are			
Wetland Hydrology Present?		No	within a Wetland?	Yes <u>^</u>	No	
HYDROLOGY						
Wetland Hydrology Indicators	<b>3</b> :			Secondary Indica	ators (minimum o	f two required)
Primary Indicators (minimum of	one is required; check	all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)		atic Fauna (B13)		Sparsely Ve	getated Concave	Surface (B8)
High Water Table (A2)		Deposits (B15) (LRF	•	☐ Drainage Pa		
Saturation (A3)		rogen Sulfide Odor (C	•	☐ Moss Trim L	, ,	<b>,</b>
Water Marks (B1) Sediment Deposits (B2)		nized Knizospheres al sence of Reduced Irol	long Living Roots (C3	Crayfish Bur	Water Table (C2	)
Drift Deposits (B3)		ent Iron Reduction in	, ,		isible on Aerial In	nagery (C9)
Algal Mat or Crust (B4)		Muck Surface (C7)	,		Position (D2)	3 , ( ,
Iron Deposits (B5)	Othe	er (Explain in Remark	s)	☐ Shallow Aqu	itard (D3)	
Inundation Visible on Aeria	,			FAC-Neutral	` '	
Water-Stained Leaves (B9)	<u> </u>			<u> </u>	noss (D8) <b>(LRR</b> 1	Γ, U)
Field Observations: Surface Water Present?	Yes X No	Depth (inches), starts	s at surface			
	Yes No					
	Yes No			d Hydrology Preser	nt? Yes	No
(includes capillary fringe)						
Describe Recorded Data (strea	m gauge, monitoring w	ell, aerial photos, pre	vious inspections), if a	vailable:		
Remarks:						
Wetland point was tal	ken at fringe ed	lne of a Coasta	al Wetland			
Wettaria point was tai	terrat minge ee	igo oi a ooasii	ai vvotiana.			

001	names of p	ianto.		Sampling Point: WWV-A W
		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species
1. Fraxinus pennsylvanica	10	<u>Y</u>	FACW	That Are OBL, FACW, or FAC: 3 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				
7				Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	10	= Total Cov	er er	OBL species $\frac{45}{45}$ $\times 1 = \frac{45}{90}$
50% of total cover: <u>5</u>	20% o	f total cover	2	FACW species $\frac{45}{2}$ $\times 2 = \frac{90}{2}$
Sapling/Shrub Stratum (Plot size: 15'	)			FAC species $\frac{0}{1000}$ x 3 = $\frac{0}{1000}$
1				FACU species $\frac{10}{x}$ $x = 40$
2.				UPL species <u>0</u> x 5 = <u>0</u>
3.				Column Totals: 100 (A) 175 (B)
4.				Prevalence Index = B/A = 1.75
5.				
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
8		= Total Cov		3 - Prevalence Index is ≤3.0 <sup>1</sup>
500/ of total power				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: _	20% 0	r total cover		
Herb Stratum (Plot size: 5' )  1 Lythrium salicaria	40	Υ	OBL	Indicators of hydric soil and wetland hydrology must
2. Phragmites australis	30	· Y	FACW	be present, unless disturbed or problematic.
2. Plantago lancelota	10	<u>'</u>	FACU	Definitions of Four Vegetation Strata:
			$\overline{}$	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4. Persicaria pennsylcanicum	5	N	FACW	more in diameter at breast height (DBH), regardless of
5. Hibiscus moscheutos	5	N	OBL	height.
6. Cirsium arvense	5	<u>N</u>	FACU	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
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	95	= Total Cov	er er	
50% of total cover: 4	7.5 20% o	f total cover	: <u>19</u>	
Woody Vine Stratum (Plot size: 15' )				
1				
2				
2 3				
2				Hydrophytic
1			/er	Hydrophytic Vegetation
2	0	= Total Cov		

SOIL Sampling Point: WWV-A W

	cription: (Describe	to the depth				or confirn	n the absence	of indicat	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Color (moist)	ox Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-20	10YR 3/1	100	Color (molot)		.,,,,		SL	dry	rtomanto	
	-				-		-	-		
<sup>1</sup> Type: C=C	oncentration, D=De <sub>l</sub>	oletion, RM=R	educed Matrix, M	S=Masked	Sand Gr	ains.			_ining, M=Mat	
Hydric Soil	Indicators: (Applic	cable to all LF	RRs, unless othe	rwise note	ed.)		Indicators	for Proble	ematic Hydric	: Soils³:
☐ Histoso	(A1)		Polyvalue B	elow Surfac	ce (S8) <b>(L</b>	.RR S, T, l	J) 🛄 1 cm l	Muck (A9) (	LRR O)	
Histic E	pipedon (A2)		Thin Dark S	urface (S9)	(LRR S,	T, U)		Muck (A10)	•	
☐ Black H	istic (A3)		Loamy Muck	ky Mineral (	(F1) <b>(LRF</b>	R O)				MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix (l	F2)		Piedm	ont Floodp	lain Soils (F19	) (LRR P, S, T)
_	d Layers (A5)		Depleted Ma					_	t Loamy Soils	(F20)
	Bodies (A6) (LRR F		Redox Dark	•	,			RA 153B)		
	ucky Mineral (A7) <b>(L</b>		Depleted Da					arent Mate		
	resence (A8) (LRR I	J)	Redox Depr		8)				k Surface (TF	12)
	uck (A9) (LRR P, T)	(011)	Marl (F10) (I	-	/MI DA 4	E4\	U Other	(Explain in	Remarks)	
	d Below Dark Surfac ark Surface (A12)	ce (ATT)	Depleted Oc		-	-	T) <sup>3</sup> Indi	oators of hy	drophytic vege	otation and
=	rairie Redox (A16) <b>(</b>	MI PA 150A)	Umbric Surf		, , ,		•	-	logy must be p	
=	/ucky Mineral (S1) (	-	Delta Ochric			, 0,		-	ed or problem	
	Gleyed Matrix (S4)	Little 0, 0,	Reduced Ve			OA. 150B)		coo diotarb	ed of problem	atio.
	Redox (S5)		Piedmont FI							
	Matrix (S6)						RA 149A, 153C	C. 153D)		
	ırface (S7) <b>(LRR P</b> ,	S, T, U)		<b>g</b>	, (	, (	<b>,</b>	,,		
	Layer (if observed)									
Type:										
	ches):						Hydric Soi	Present?	Yes	No
Remarks:			<del></del>				1.13			
Remarks.										
1										
i										
1										
1										

Project/Site: Glassboro-Camde	en Line	Citv/C	county: Camden Cou	nty	Sampling Date:	9/20/13		
Applicant/Owner: DRPA/NJT				State: NJ				
Investigator(s): DD, MF		Section	on, Township, Range: _		Camping Cint.			
Landform (hillslone terrace etc.)	. Depression	Local	relief (concave, conve	v none). Concave	Slo	ne (%). 0-2%		
Subregion (LRR or MLRA): MLF	RA 149A	20001 Lat: 39°52'37.4	9"N Long:	75° 7'25.84"W	Olo	atum. NAD 1983		
Soil Map Unit Name: Urban Ian	d	Lat	Long.	NWI classific	ation: PUBHx			
Are climatic / hydrologic condition		r this time of year? V						
Are Vegetation, Soil				al Circumstances" p		No		
						NO		
Are Vegetation, Soil				, explain any answe	,			
SUMMARY OF FINDINGS	i – Attach site m	ap showing sam	npling point locat	ions, transects	, important f	eatures, etc.		
Hydrophytic Vegetation Present	? Yes X	_ No	1.41.0					
Hydric Soil Present?	Yes X	No	Is the Sampled Area within a Wetland?		No			
Hydric Soil Present? Wetland Hydrology Present?	Yes X	_ No	within a wettand?	1es	NO	_		
Remarks:								
Pond edge								
HYDROLOGY								
Wetland Hydrology Indicators	 \:			Secondary Indica	tors (minimum o	f two required)		
Primary Indicators (minimum of		( all that apply)		Surface Soil	•	<u>rwo roquirou</u>		
Surface Water (A1)								
High Water Table (A2)		l Deposits (B15) (LRF	₹ U)	Drainage Pa	=	, ,		
Saturation (A3)	<u> </u>	lrogen Sulfide Odor (0	C1)	Moss Trim Li	nes (B16)			
Water Marks (B1)	U Oxid	dized Rhizospheres a	long Living Roots (C3)	Dry-Season	Water Table (C2)	)		
Sediment Deposits (B2)	Pre:	sence of Reduced Iro	n (C4)	Crayfish Bur	rows (C8)			
Drift Deposits (B3)	_	ent Iron Reduction in	Tilled Soils (C6)		sible on Aerial In	nagery (C9)		
Algal Mat or Crust (B4)		n Muck Surface (C7)		=	Position (D2)			
Iron Deposits (B5)		er (Explain in Remark	(s)	☐ Shallow Aqu	` '			
Inundation Visible on Aerial				FAC-Neutral		F 10		
☐ Water-Stained Leaves (B9) Field Observations:				Spnagnum n	noss (D8) <b>(LRR 1</b>	. , U)		
	Yes X No	Depth (inches): Sur	face					
	Yes X No							
	Yes X No		urface Wetland	Hydrology Preser	it? Yes X	No		
(includes capillary fringe)  Describe Recorded Data (strear	m gauge, monitoring w	vell perial photos pro	vious inspections) if a	vailable:				
Describe Necorded Data (streat	in gauge, monitoring w	reli, aeriai priotos, pre	vious irispections), ir a	valiable.				
Remarks:								

Tree Stratum (Plot size: 30'  1. Morus rubra 2. Salix nigra 3		Dominant Species?		Dominance Test worksheet:
1. Morus rubra	100	Species?		
2. Salix nigra 34.				Number of Dominant Species
3	15	Υ	FACU	That Are OBL, FACW, or FAC: 2 (A)
4	13	N	OBL	Total New hours of Development
4				Total Number of Dominant Species Across All Strata: 3 (B)
				Species Across All Strata.
5				Percent of Dominant Species
				That Are OBL, FACW, or FAC: 66% (A/B)
6				Prevalence Index worksheet:
7				
8				Total % Cover of: Multiply by:  OBL species 35 x 1 = 35
<u>.</u>	115 :	= Total Cov	er	x :
50% of total cover: <sup>57.5</sup>	20% of	total cover:	23	FACW species 20 x 2 = 40
Sapling/Shrub Stratum (Plot size: 15' )				FAC species <u>80</u> x 3 = <u>240</u>
	20	Υ	FACW	FACU species 100 x 4 = 400
· ·				UPL species x 5 =
2				Column Totals: 235 (A) 715 (B)
3				Column rotals (A) (B)
4				Prevalence Index = B/A = 3.04
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>
		= Total Cov		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: <u>10</u>	_ 20% of	total cover:	4	Pond edge
Herb Stratum (Plot size: 5' )				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	80	Υ	FAC	be present, unless disturbed or problematic.
2. Peltandra virginica	15	N	OBL	Definitions of Four Vegetation Strata:
I Bleise and a second a second and a second	 5	N	OBL	Deminions of Four Vegetation Strata.
·				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4				more in diameter at breast height (DBH), regardless of
5				height.
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Harb All harbassays (non woody) plants regardless
9.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				or orze, and weedy plante lees than orze it tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
· -	100 =	= Total Cov	er	
50% of total cover: <u>50</u>	_ 20% of	total cover:	20	
Woody Vine Stratum (Plot size: 15' )	_			
1				
2				
3				
4				
				Hydrophytic
5	:	= Total Cov	er	Vegetation
5		total accord		Dresent2 Ves X Ne
5	20% of			Present? Yes X No

SOIL Sampling Point: WBL-B W

	Matrix			x Features		n the absence			
Depth (inches)	Color (moist)	%	Color (moist)		Γype¹ Loc²	<u>Texture</u>		Remarks	
0-20	10 YR 2/1	100					Muck		
						<del></del>			
							-		
	Concentration, D=De							ining, M=Matı	
	Indicators: (Applie	cable to all Li			•			matic Hydric	Solls :
Histoso			_		(S8) <b>(LRR S, T</b> , l	_	/luck (A9) <b>(I</b>	-	
_	pipedon (A2) listic (A3)		=	urface (S9) <b>(L</b> ‹y Mineral (F1			/luck (A10)		MLRA 150A,B)
=	en Sulfide (A4)		=	ed Matrix (F2)					(LRR P, S, T)
= ' '	d Layers (A5)		Depleted Ma	, ,	,		-	Loamy Soils	
	Bodies (A6) (LRR I	P, T, U)		Surface (F6)			RA 153B)		(- = - )
	ucky Mineral (A7) <b>(L</b>		Depleted Da	ırk Surface (F	7)		arent Mater	ial (TF2)	
	resence (A8) (LRR I		Redox Depr	essions (F8)		<u></u> Very S	hallow Dar	k Surface (TF	12)
	uck (A9) <b>(LRR P, T)</b>		Marl (F10) (I	· ·		U Other	(Explain in	Remarks)	
=	ed Below Dark Surfac	ce (A11)	_	chric (F11) <b>(M</b>	-	2			
=	ark Surface (A12)		=		(F12) <b>(LRR O, P,</b>	•	-	drophytic vege	
=	Prairie Redox (A16) (			ace (F13) <b>(LR</b>	•		-	ogy must be p	
_	Mucky Mineral (S1) ( Gleyed Matrix (S4)	LKK U, 3)		: (F17) <b>(MLRA</b> :rtic (F18) <b>(M</b> L	. 151) .RA 150A, 150B)		ess disturbe	ed or problema	auc.
_	Redox (S5)		_		s (F19) <b>(MLRA 1</b> 4				
	d Matrix (S6)				Soils (F20) (MLR		. 153D)		
_	urface (S7) (LRR P,	S, T, U)		g,	(·) (····		,,		
	Layer (if observed)								
Type: No	one								
Depth (in	nches):		<del></del>			Hydric Soil	Present?	Yes X	No
	1011 <del>0</del> 5).					1			<u> </u>
Remarks:	iches).								
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Project/Site: Glassboro-Camden L	Ine	City/C	<sub>ountv:</sub> Camden		Sampling [	<sub>Date:</sub> 9/20/2013
Applicant/Owner: DRPA/NJT				State: NJ	Sampling F	Point: WBL-B UP
Investigator(s): DD, MF		Section		nge: Brooklawn		
Landform (hillslope, terrace, etc.): Hill	Islope	Local				Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 14						NAD 1983
Soil Map Unit Name: Urban land				NWI	classification: N/A	_ Batam:
Are climatic / hydrologic conditions on	the site typical for	this time of year? Y			·	
Are Vegetation, Soil, o						es X No
Are Vegetation, Soil, o					answers in Remarl	
			,	•		•
SUMMARY OF FINDINGS – A	Attach site ma	ap snowing sam	ipling point ic	ocations, tran	sects, importa	nt features, etc.
Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled	Area		
Hydric Soil Present?	Yes	No X No X	within a Wetlan		esNo_X	
Wetland Hydrology Present?  Remarks:	Yes	No X				
LIVED CO.						
HYDROLOGY Westland Hydrology Indicators:				Socondar	y Indicators (minimu	um of two required)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one i	is required: check	all that annly)			ce Soil Cracks (B6)	
Surface Water (A1)		atic Fauna (B13)			sely Vegetated Con	
High Water Table (A2)		Deposits (B15) (LRF	R U)		age Patterns (B10)	, ,
Saturation (A3)	Hydr	ogen Sulfide Odor (C	01)	Moss	Trim Lines (B16)	
☐ Water Marks (B1)		ized Rhizospheres al			Season Water Table	(C2)
Sediment Deposits (B2)		ence of Reduced Iron	, ,		fish Burrows (C8)	ial Imagen (CO)
Drift Deposits (B3) Algal Mat or Crust (B4)	_	ent Iron Reduction in Muck Surface (C7)	Tilled Solls (Co)	_	ation Visible on Aer norphic Position (D2	
Iron Deposits (B5)		r (Explain in Remark	s)	=	ow Aquitard (D3)	-,
Inundation Visible on Aerial Imag	gery (B7)			FAC-	Neutral Test (D5)	
Water-Stained Leaves (B9)				☐ Spha	gnum moss (D8) <b>(L</b>	RR T, U)
Field Observations:	<b>X</b>					
		Depth (inches):				
		Depth (inches): Depth (inches):		tland Hydrology	Present? Yes	No X
(includes capillary fringe)					riesent: les_	
Describe Recorded Data (stream gain	uge, monitoring we	ell, aerial photos, pre	vious inspections)	), if available:		
Remarks:						

001		Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30' )  1. Salix nigra	<u>% Cover</u> 55	Species? Y	Status OBL	Number of Dominant Species	
		<u>Y</u>		That Are OBL, FACW, or FAC: 2 (A	4)
2. Morus rubra 3	40		FACU	Total Number of Dominant Species Across All Strata: 6 (B	3)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A	√B)
6				Prevalence Index worksheet:	
7				Total % Cover of: Multiply by:	
8				OBL species 55 x 1 = 55	
	95	= Total Cov	er	FACW species 0 x 2 = 0	
50% of total cover:	20% of	total cover:		FAC species 10 x 3 = 30	
Sapling/Shrub Stratum (Plot size: 15' )				FACU species 123 x 4 = 492	
1. Lonicera fragrantissima	85	<u>Y</u>	UPL	UPL species 105 x 5 = 525	
2. Phytolacca americana	18	<u>N</u>	FACU		(D)
3. Rhus typhina	15	<u>N</u>	UPL	Column Totals: 293 (A) 1102 (	(D)
4				Prevalence Index = B/A = $\frac{3.76}{}$	
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>	
	118	= Total Cov	er	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover:	20% of	total cover:			
Herb Stratum (Plot size: 5' )				<sup>1</sup> Indicators of hydric soil and wetland hydrology mus	st
1. Ambrosia artemisiifolia	65	Υ	FACU	be present, unless disturbed or problematic.	
2. Lonicera fragrantissima	10	N	UPL	Definitions of Four Vegetation Strata:	
3				Tree – Woody plants, excluding vines, 3 in. (7.6 cm	) or
4				more in diameter at breast height (DBH), regardless	
5				height.	
6.				Sapling/Shrub – Woody plants, excluding vines, les	99
7.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	33
8.				Harb All barbassaus (non woody) plants, regardle	
9.				Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.	288
10.					_
11				Woody vine – All woody vines greater than 3.28 ft i height.	in
12.				noight.	
12.	<del> </del>	= Total Cov	or		
50% of total cover:					
Woody Vine Stratum (Plot size: 15' )	20 /0 01	total cover.			
1 Vitis vinifera	10	Υ	UPL		
2. Lonicera japonica	10	<u>Y</u>	FAC		
		<del></del>			
3					
4					
5	20			Hydrophytic	
10		= Total Cov		Vegetation Present? Yes No X	
	20% of	total cover:			
Remarks: (If observed, list morphological adaptations bel	ow).				

Sampling Point: WBL-B UP

SOIL Sampling Point: WBL-B UP

Profile Desc	cription: (Describe	to the depth	needed to docu	ment the in	dicator	or confirm	the absence o	f indicators.)		
Depth	Matrix			x Features				_		
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Rei	marks	
0-3	10 YR 4/3						SIL			
·										
							·			
1Type: C=C	oncentration, D=De	nletion PM-P	Peduced Matrix M	S-Macked 9	Sand Gra	———	<sup>2</sup> Location: F	PL=Pore Lining, N	A-Matriy	
	Indicators: (Appli					aii i 5.		or Problematic I		
Histosol	· · · · · ·		Polyvalue Be			RRSTII		uck (A9) <b>(LRR O)</b>	-	
	pipedon (A2)		Thin Dark S				. —	uck (A9) <b>(LRR S</b>		
<b> </b>	istic (A3)		Loamy Muck		•			d Vertic (F18) <b>(o</b> u		LRA 150A.B)
I <b>=</b>	en Sulfide (A4)		Loamy Gley			. •,		nt Floodplain Soil		
I <b>=</b> -	d Layers (A5)		Depleted Ma		_,			ous Bright Loamy		-
_	Bodies (A6) (LRR I	P, T, U)	Redox Dark		6)			A 153B)		,
	ucky Mineral (A7) <b>(L</b>		Depleted Da	rk Surface (	(F7)			ent Material (TF2	2)	
☐ Muck Pr	resence (A8) (LRR I	J)	Redox Depr	essions (F8)	)		U Very Sh	allow Dark Surfa	ce (TF12	2)
1 cm Μι	uck (A9) <b>(LRR P, T)</b>		Marl (F10) (I	_RR U)			U Other (E	xplain in Remark	(s)	
Deplete	d Below Dark Surfa	ce (A11)	Depleted Oc	hric (F11) <b>(I</b>	MLRA 15	51)				
<b>=</b>	ark Surface (A12)		☐ Iron-Mangar				-	tors of hydrophyt	_	
=	rairie Redox (A16) (	-	_			, U)		and hydrology mu	-	
_	Mucky Mineral (S1)	LRR O, S)	Delta Ochric		-	0.4 4E0D)	unles	ss disturbed or pr	oblemati	C.
	Gleyed Matrix (S4)		Reduced Ve				0.4.\			
	Redox (S5)		Piedmont Fl					452D)		
	l Matrix (S6) rface (S7) <b>(LRR P,</b>	C T III	Anomalous	Bright Loam	y Solis (i	-20) ( <b>WLR</b>	A 149A, 153C,	1530)		
	Layer (if observed)						T			
Type: Co		·•								
Depth (in			<del></del>				Hydric Soil F	Present? Yes		No X
			<del></del>				Hydric 30ii F	resent: res		
l Remarks: S	everely comp	acted up	land area at	edge of	f track	S				
	, ,	'		9						

Project/Site: Glassboro-Cam	den LIne	City/C	ounty: Gloucester		Sampling Date	<sub>:</sub> 9/19/13
Applicant/Owner: DRPA/NJT			,	State: NJ		
Investigator(s): DD, MF		Section	on, Township, Range:			
Landform (hillslope, terrace, etc	.): Depression	Local	relief (concave, conve	<sub>x, none):</sub> Concave	e Slo	ope (%): 0-5
Subregion (LRR or MLRA): ML	.RA 149A	 Lat: 39°51'29.2	0"N Long:	75° 8'15.94"W		natum: NAD 1983
Subregion (LRR or MLRA): ML Soil Map Unit Name: Fallsingt	on-Urban land compl	ex, 0 to 5 percent	slopes	NWI classifi	cation: N/A	
Are climatic / hydrologic condition						
Are Vegetation, Soil	•	•	<u> </u>	nal Circumstances"		ζ <sub>No</sub>
Are Vegetation, Soil				, explain any answe		
SUMMARY OF FINDING						features, etc.
				, , , , , , , , , , , , , , , , , , ,	<u> </u>	· ·
Hydrophytic Vegetation Present	nt? Yes X	No	Is the Sampled Area			
Hydric Soil Present? Wetland Hydrology Present?		No No	within a Wetland?	Yes X	No	
Remarks:		. 140				
HYDROLOGY						
Wetland Hydrology Indicator	rs:			Secondary Indic	ators (minimum c	of two required)
Primary Indicators (minimum o	of one is required; check	all that apply)	_	Surface Soil	l Cracks (B6)	
Surface Water (A1)	— ·	atic Fauna (B13)			getated Concave	Surface (B8)
High Water Table (A2)		Deposits (B15) (LRF	=		atterns (B10)	
Saturation (A3) Water Marks (B1)		rogen Sulfide Odor (C	راز long Living Roots (C3)	Moss Trim L	₋ines (B16) Water Table (C2	2)
Sediment Deposits (B2)		sence of Reduced Iro		Crayfish Bu		-)
Drift Deposits (B3)		ent Iron Reduction in	· ·		/isible on Aerial I	magery (C9)
Algal Mat or Crust (B4)	Thin	Muck Surface (C7)		Geomorphic	Position (D2)	
Iron Deposits (B5)		er (Explain in Remark	s)	☐ Shallow Aqι		
Inundation Visible on Aeri	,			FAC-Neutra	` '	T 10
☐ Water-Stained Leaves (B9 Field Observations:	<del>])</del>			<u> </u>	moss (D8) (LRR	1, 0)
Surface Water Present?	Yes No X	Depth (inches):				
Water Table Present?	Yes No X					
Saturation Present?	Yes X No		urface Wetland	l Hydrology Prese	nt? Yes X	No
(includes capillary fringe)  Describe Recorded Data (streater)	am gauge, monitoring w	all agrial photos pre	vious inspections) if a	vailable:		
Describe Necorded Data (Street	am gauge, monitoring we	eli, aeriai priotos, pre	vious irispections), ii a	valiable.		
Remarks:						
· iomano						

001		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )  1 Acer Rubrum		Species?	Status FAC	Number of Dominant Species
11.	50	<u>Y</u>		That Are OBL, FACW, or FAC: 4 (A)
Liquidambar styraciflua     .	45		FAC	Total Number of Dominant Species Across All Strata: 6 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)
6.				
7.				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
	0.5	= Total Cov	er	OBL species 15 x 1 = 15
50% of total cover: 47.5	20% of	total cover:	19	FACW species <u>55</u> x 2 = <u>110</u>
Sapling/Shrub Stratum (Plot size: 15' )				FAC species 140 x 3 = 420
1. Fallopia japonica	15	Υ	UPL	FACU species 10 x 4 = 40
2 Prunus serotina	10	Y	FACU	UPL species 15 x 5 = 75
3.				Column Totals: <u>235</u> (A) <u>660</u> (B)
4				Prevalence Index = B/A = 2.8
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				② 3 - Prevalence Index is ≤3.0 <sup>1</sup>
40.5		= Total Cov		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: 12.5	20% of	total cover:	4	
Herb Stratum (Plot size: 5' )  1. Cyperus esculentus	45	Υ	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Persicaria pennsylvanicum	40	Y	FACW	Definitions of Four Vegetation Strata:
3. Asclepias incarnata	15	N	OBL	
4. Hypericum canadense	15	N	FACW	<b>Tree</b> – 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
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				<b>Herb</b> – All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	115 :	= Total Cov	er	
50% of total cover: <u>57.5</u>	20% of	total cover:	23	
Woody Vine Stratum (Plot size: 15' )				
1				
2.				
3.				
4.				
5				
<u> </u>		 = Total Cov		Hydrophytic Vegetation
50% of total cover:				Present? Yes X No No
		total cover.		
Remarks: (If observed, list morphological adaptations below	ow).			

Sampling Point: WDP-D W

SOIL Sampling Point: WDP-D W

		e to the dep	oth needed to docu			or confir	m the absence of i	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 2/2	100	<u>Color (moist)</u>		Турс		TOXICIO	remarks
3+	10YR 3/1	80	10YR 4/6	20		 PL	SCL	
<del></del>	10111 3/1		10111 4/0					_
			-				<u> </u>	
			-	_	_	_	- , <u></u> <u></u> -	
						_		_
							<del></del>	
1 <sub>T</sub> 0-0			-Dadward Matrix M	C-Maala			21	-David Lining M-Matrix
			=Reduced Matrix, M LRRs, unless othe			rains.		=Pore Lining, M=Matrix.  Problematic Hydric Soils <sup>3</sup> :
Histosol		cable to all	Polyvalue Be		•	IPPST		(A9) (LRR O)
_	pipedon (A2)		Thin Dark Su				· —	(A3) (LIR S)
	istic (A3)		Loamy Muck					/ertic (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)		Piedmont	Floodplain Soils (F19) (LRR P, S, T)
_	d Layers (A5)		Depleted Ma					s Bright Loamy Soils (F20)
	Bodies (A6) (LRR		Redox Dark				☐ (MLRA 1	
	ucky Mineral (A7) <b>(L</b> resence (A8) <b>(LRR</b>		Depleted Da  Redox Depre					nt Material (TF2) ow Dark Surface (TF12)
	uck (A9) <b>(LRR P, T)</b>		Marl (F10) (I		-6)			ow Dark Surface (17 12)  Dlain in Remarks)
	d Below Dark Surfa		Depleted Oc	-	) (MLRA 1	151)	Outlot (Exp	Jan III Kemarke,
_	ark Surface (A12)	,	☐ Iron-Mangar	•		•	, <b>T)</b> <sup>3</sup> Indicator	rs of hydrophytic vegetation and
Coast P	rairie Redox (A16)	(MLRA 150	A) 🔲 Umbric Surfa	ace (F13)	(LRR P,	T, U)	wetland	d hydrology must be present,
_	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric		-			disturbed or problematic.
_	Gleyed Matrix (S4)		Reduced Ve				•	
	Redox (S5) I Matrix (S6)		Piedmont Flo				49A) RA 149A, 153C, 15	3D)
= ''	irface (S7) <b>(LRR P,</b>	S. T. U)	<u>□</u> Anomalous i	bright Loa	arriy Solis	(1 20) <b>(WL</b>	KA 149A, 133C, 13	35)
	Layer (if observed							
Type: No	one							
Depth (in	ches):						Hydric Soil Pre	esent? Yes X No
Remarks:	,							

Project/Site: Glassboro-Camde	en Line	City/C	ounty: Gloucester		Sampling Date:	9/19/13
Applicant/Owner: DRPA/NJT				State: NJ	Sampling Point	WDP-D U
Investigator(s): DD, MF		Section	n, Township, Range:			
Landform (hillslope, terrace, etc.):	Hillslope	Local	relief (concave, conve	ex, none); None	Slo	pe (%): 0-5
Subregion (LRR or MLRA): MLR	A 149A	 Lat: 39°51'30.0	01"N Long	75° 8'16.24"W	 Dί	atum: NAD 1983
Subregion (LRR or MLRA): MLR Soil Map Unit Name: Fallsingtor	n-Urban land comple	ex, 0 to 5 percent :	slopes	NWI classific	cation: N/A	
Are climatic / hydrologic conditions						
Are Vegetation, Soil				– ` nal Circumstances" բ		No
Are Vegetation, Soil				d, explain any answe		
SUMMARY OF FINDINGS			,	•	,	eatures, etc.
				<u> </u>	<u>· · · · · · · · · · · · · · · · · · · </u>	<u> </u>
Hydrophytic Vegetation Present?  Hydric Soil Present?		No X	Is the Sampled Are		V	
Wetland Hydrology Present?	Yes	No X No X	within a Wetland?	Yes	No X	_
Remarks:		l.				
HYDROLOGY						
Wetland Hydrology Indicators	<u> </u>			Secondary Indica	ators (minimum o	f two required)
Primary Indicators (minimum of o	one is required; check	all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	Aqua	atic Fauna (B13)		Sparsely Ve	getated Concave	Surface (B8)
High Water Table (A2)		Deposits (B15) (LRF		Drainage Pa	tterns (B10)	
Saturation (A3)		ogen Sulfide Odor (C		Moss Trim L		
Water Marks (B1)		•	long Living Roots (C3		Water Table (C2	)
Sediment Deposits (B2)		ence of Reduced Iron	, ,	☐ Crayfish Bur		(CO)
Drift Deposits (B3) Algal Mat or Crust (B4)		ent Iron Reduction in Muck Surface (C7)	Tilled Solls (C6)	_	isible on Aerial In Position (D2)	nagery (C9)
Iron Deposits (B5)		r (Explain in Remark	e)	☐ Geomorphic ☐ Shallow Agu	` '	
Inundation Visible on Aerial		Explain in Remark	3)	FAC-Neutral	` '	
Water-Stained Leaves (B9)	3-7 ( 7)				noss (D8) <b>(LRR</b> 1	Γ, U)
Field Observations:						
	Yes No X					
	Yes No X					~
Saturation Present? \(\) (includes capillary fringe)	Yes No X	Depth (inches):	Wetland	d Hydrology Preser	ıt? Yes	No_X
Describe Recorded Data (stream	n gauge, monitoring we	ell, aerial photos, pre	vious inspections), if a	available:		
Devente						
Remarks:						

		ants.		Sampling Point: WDP-D U
20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species
1. Prunus serotina	10	<u>Y</u>	FACU	That Are OBL, FACW, or FAC: $\frac{1}{}$ (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 33.3% (A/B)
6				
7				Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	10	= Total Cov	er	OBL species $0 \times 1 = 0$
50% of total cover: 5	20% of	total cover:	2	FACW species $\frac{30}{20}$ $\times 2 = \frac{60}{20}$
Sapling/Shrub Stratum (Plot size: 15' )				FAC species $\frac{20}{300}$ x 3 = $\frac{60}{300}$
1. Rhus typhina	15	Υ	NI	FACU species $\frac{20}{x}$ $x = 4 = \frac{80}{x}$
2.				UPL species <u>5</u> x 5 = <u>25</u>
3.				Column Totals: <u>75</u> (A) <u>225</u> (B)
4				D 1 1 1 2/2 3
				Prevalence Index = B/A = 3
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 <sup>1</sup>
8	15	= Total Cov		3 - Prevalence Index is ≤3.0'  Problematic Hydrophytic Vegetation¹ (Explain)
8	15			1 <del></del>
8	20% of	total cover:	3	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
8	15 20% of	total cover:	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	15 20% of 30 20	total cover:	FACW NI	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
8	30 20 10	Y Y N	FACW NI FACU	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:
8	30 20 10 10	Y Y N N	FACW NI FACU FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5	Y Y N	FACW NI FACU	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20% of 20 10 10 5	Y Y N N	FACW NI FACU FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5	Y Y N N	FACW NI FACU FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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.
8	30 20% of 20 10 10 5	Y Y N N N N N N	FACW NI FACU FAC FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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.
8	30 20 10 10 5 5	Y Y N N N N N N	FACW NI FACU FAC FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5 5	Y Y N N N N N N	FACW NI FACU FAC FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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.
8	30 20 10 10 5 5	Y Y N N N N N N	FACW NI FACU FAC FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5 5	Y Y N N N N N N	FACW NI FACU FAC FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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.
8	30 20 10 10 5 5	Y Y N N N N N N N O N O O O O O O O O O	FACW NI FACU FAC FAC UPL	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5 5 5	Y Y N N N N N N T T T T T T T T T T T T	FACW NI FACU FAC FAC UPL	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5 5 5	Y Y N N N N N N N O N O O O O O O O O O	FACW NI FACU FAC FAC UPL	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	30 20 10 10 5 5 5	Y Y N N N N N N T T T T T T T T T T T T	FACW NI FACU FAC FAC UPL	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	15 20% of 20 10 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Y Y N N N N N T N T N T N T N T N T N T	FACW NI FACU FAC FAC UPL  Terror 17	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	15 20% of 20 10 10 5 5 5 5 20% of	Y Y N N N N N T T T T T T T T T T T T T	FACW NI FACU FAC FAC UPL  er 17	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	15 20% of 20 10 10 5 5 5 5 20% of	Y Y N N N N N T N T N T N T N T N T N T	FACW NI FACU FAC FAC UPL  Terror 17	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	15 20% of 20 10 10 5 5 5 5 20% of	Y Y N N N N N T N T N T N T N N T N T N	FACW NI FACU FAC FAC UPL  Terror 17	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators 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
8	15 20% of 30 20 10 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Y Y N N N N N N  T N N N N N N N N N N N	FACW NI FACU FAC FAC UPL  TAC FAC FAC FAC FAC FAC FAC FAC FAC FAC F	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.
8	15 20% of 20 10 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Y Y N N N N N T N T N T N T N N T N T N	FACW NI FACU FAC FAC UPL  er 17 FAC FACU FACU FACU	Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.

SOIL Sampling Point: WDP-D U

Depth	cription: (Describe Matrix	to the depth		x Features		or confirm	the absence of	indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remark	S
0-5	10YR 4/3	100					Sandy Loam		
-									
	•								_
									<del>.</del>
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM=R	educed Matrix, M	S=Masked	Sand Gr	ains.	<sup>2</sup> Location: PL	=Pore Lining, M=M	atrix.
Hydric Soil	Indicators: (Appli	cable to all LF	RRs, unless othe	rwise note	ed.)		Indicators for	Problematic Hydr	ic Soils³:
☐ Histoso	l (A1)		Polyvalue B	elow Surfac	ce (S8) <b>(L</b>	RR S, T, L	<b>J)</b> 1 cm Muc	k (A9) <b>(LRR O)</b>	
Histic E	pipedon (A2)		Thin Dark S	urface (S9)	(LRR S,	T, U)	2 cm Muc	k (A10) (LRR S)	
Black H	istic (A3)		Loamy Mucl	ky Mineral (	F1) <b>(LRF</b>	R O)	Reduced	Vertic (F18) (outsic	le MLRA 150A,B)
Hydrog	en Sulfide (A4)		Loamy Gley	ed Matrix (F	=2)		<u></u> ☐ Piedmont	Floodplain Soils (F	19) <b>(LRR P, S, T)</b>
☐ Stratifie	d Layers (A5)		Depleted Ma	atrix (F3)			<u> </u>	ıs Bright Loamy Soi	ls (F20)
	Bodies (A6) (LRR I		Redox Dark	Surface (F	6)		☐ (MLRA		
	ucky Mineral (A7) <b>(L</b>		Depleted Da		` '			nt Material (TF2)	
	resence (A8) (LRR I		Redox Depr		3)			low Dark Surface (1	F12)
	uck (A9) (LRR P, T)		Marl (F10) (I	•			U Other (Ex	plain in Remarks)	
= '	d Below Dark Surfa	ce (A11)	Depleted Oc	, , ,	-	•	<b>-</b> 3		
=	ark Surface (A12)	(MI DA 450A)	Iron-Mangar				-	rs of hydrophytic ve	-
=	Prairie Redox (A16) (		Umbric Surf			, U)		d hydrology must be	•
=	Mucky Mineral (S1) (	(LKK U, S)	Delta Ochric		-	.OA 150D)		disturbed or proble	mauc.
	Gleyed Matrix (S4) Redox (S5)		Reduced Ve						
_	d Matrix (S6)						.эд) A 149A, 153C, 15	(3D)	
=	urface (S7) (LRR P,	S. T. U)	Anomalous	Bright Loan	ny cons (	1 20) ( <b>MEI</b>	A 143A, 1330, 10	,55,	
	Layer (if observed)								
	ompacted Soil	,-							
	nches): <u>5"</u>		<u> </u>				Hydric Soil Pro	esent? Yes	No X
	iciles). <u></u>		_				Hydric 30ii Fit	256111: 165	
Remarks:									

Project/Site: Glassboro-Camde	n LIne	Citv/C	ounty: Gloucester		Sampling Date:	9/19/13
Applicant/Owner: DRPA/NJT			ounty: Gloucester	State: NJ	Sampling Point	WWY-A W
Investigator(s): DD, MF		Section Section			Camping : Cin	
Landform (hillslope, terrace, etc.):					Slo	ne (%). 0-1
Subragion (LDD or MLDA): MLR	 A 149A	200ar	1"N Long:	75° 8'48.19"W		otum: NAD 1983
Subregion (LRR or MLRA): MLR. Soil Map Unit Name: Freehold s	andv loam. 10 to	Lat 15 percent slopes	Long	NIM/L elegation	Do	atum
Are climatic / hydrologic conditions						
				al Circumstances" p		
Are Vegetation, Soil				•		No
Are Vegetation, Soil				explain any answe		
SUMMARY OF FINDINGS	<ul> <li>Attach site n</li> </ul>	nap showing sam	pling point locati	ons, transects	, important f	eatures, etc.
Hydrophytic Vegetation Present?	, Yes X	No				
	Yes X	No	Is the Sampled Area within a Wetland?	vaa X	No	
Hydric Soil Present? Wetland Hydrology Present?	Yes X	No	within a wetiand?	res <u>~                                    </u>	NO	_
Remarks:		1				
HYDROLOGY						5.4
Wetland Hydrology Indicators:		-1		Secondary Indica	•	two required)
Primary Indicators (minimum of o		* * * * *		Surface Soil		Curfore (DO)
Surface Water (A1) High Water Table (A2)		<sub>l</sub> uatic Fauna (B13) arl Deposits (B15) <b>(LRF</b>	) III	Drainage Par	getated Concave	Surface (B8)
Saturation (A3)		/drogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)		kidized Rhizospheres al			Water Table (C2	)
Sediment Deposits (B2)		esence of Reduced Iron		Crayfish Buri		•
Drift Deposits (B3)	_	ecent Iron Reduction in	Tilled Soils (C6)	Saturation Vi	sible on Aerial In	nagery (C9)
Algal Mat or Crust (B4)		in Muck Surface (C7)			Position (D2)	
Iron Deposits (B5)		her (Explain in Remark	s)	Shallow Aqui	` '	
Inundation Visible on Aerial Water-Stained Leaves (B9)	Imagery (B7)			FAC-Neutral	Test (D5) noss (D8) <b>(LRR</b> 1	F 11N
Field Observations:				Spriagrium n	1035 (D0) (LIKK	1, 0)
	′es No <sup>X</sup>	_ Depth (inches):				
		_ Depth (inches):				
		Depth (inches):		Hydrology Presen	it? Yes X	No
(includes capillary fringe)  Describe Recorded Data (stream	a dauge monitoring	well aerial photos pre	vious inspections) if av	ailahla:		
Describe Recorded Data (Stream	r gauge, monitoring	well, aerial priotos, pre-	vious irispections), ir av	allable.		
Remarks:						

			Sampling Point: WWY-A W
	Dominant		Dominance Test worksheet:
	Species?		Number of Dominant Species
- —			That Are OBL, FACW, or FAC: 2 (A)
			Total Number of Dominant
			Species Across All Strata: 3 (B)
			Percent of Dominant Species
			That Are OBL, FACW, or FAC: 66% (A/B
			Prevalence Index worksheet:
			Total % Cover of: Multiply by:
	= Total Cov	er	OBL species <u>55</u> x 1 = <u>55</u>
			FACW species <u>35</u> x 2 = <u>70</u>
2070 01	total cover		FAC species 10 x 3 = 30
			FACU species $0 \times 4 = 0$
			UPL species $0 \times 5 = 0$
			Column Totals: 100 (A) 155 (B)
			(-)
			Prevalence Index = B/A = $1.55$
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
			3 - Prevalence Index is ≤3.0 <sup>1</sup>
0	= Total Cov	er	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			1 Toblematic Trydrophytic Vegetation (Explain)
			The street and street and several and the street and several and s
40	Υ	OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
30	<u>Y</u>	FACW	Definitions of Four Vegetation Strata:
	N		Definitions of Four Vegetation Strata.
	$\overline{}$		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o
			more in diameter at breast height (DBH), regardless of height.
- <del></del>	<del></del>		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.
	= Total Cov	er	
20% of			
20 /6 01	total cover		
- 			
- - - - -			Hydrophytic
			Hydrophytic Vegetation Present? Yes X No
	10 20% of 20% of 40 30 10 5 5	10 = Total Covers 20% of total covers  0 = Total Covers 20% of total covers 40 Y 30 Y 10 N 5 N 5 N	10

SOIL Sampling Point: WWY-A W

Depth   Matrix   Color (moist)   5c   Color (moist)   %   Type   Loc   Texture   Remarks
10
12-20
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Histosol (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  Muck Presence (A8) (LRR P, T, U)  Depleted Dark Surface (F6)  Muck (A9) (LRR P, T, U)  Depleted Dark Surface (F7)  Muck (A9) (LRR P, T, U)  Depleted Below Dark Surface (F1) (LRR U)  Depleted Deform (F10) (LRR U)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Dark Surface (S7)  Redus Dark Surface (F1) (MLRA 150A)  Depleted Deform (F10) (MLRA 150B)  Sandy Redox (S5)  Dark Surface (S7)  Redus Dark Surface (F13) (LRR O, P, T)  Mark (F10) (LRR U)  Depleted Deform (F17) (MLRA 150B)  Sandy Redox (S5)  Pledmont Floodplain Soils (F19) (MLRA 149A)  Stratificators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A7) Hydrogen Sulfide (A8) Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A7) Hydrogen Sulfide (A8) Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histosol (A2)  Hydrogen Sulfide (A4)  Corganic Bodies (A6) (LRR P, T, U)  Corganic Bodies (A6) (LRR P, T, U)  House All Care Body Matrix (F3)  Depleted Dark Surface (F7)  Redox Depressions (F8)  Hydrogen Sulface (A10) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Mothic (F17) (MLRA 151)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F17) (MLRA 151)  Iron-Manganese Masses (F12) (LRR P, T, U)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histosol (A2)  Hydrogen Sulfide (A4)  Corganic Bodies (A6) (LRR P, T, U)  Corganic Bodies (A6) (LRR P, T, U)  House All Care Body Matrix (F3)  Depleted Dark Surface (F7)  Redox Depressions (F8)  Hydrogen Sulface (A10) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Mothic (F17) (MLRA 151)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F17) (MLRA 151)  Iron-Manganese Masses (F12) (LRR P, T, U)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histosol (A2)  Hydrogen Sulfide (A4)  Corganic Bodies (A6) (LRR P, T, U)  Corganic Bodies (A6) (LRR P, T, U)  House All Care Body Matrix (F3)  Depleted Dark Surface (F7)  Redox Depressions (F8)  Hydrogen Sulface (A10) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Mothic (F17) (MLRA 151)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F17) (MLRA 151)  Iron-Manganese Masses (F12) (LRR P, T, U)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histosol (A2)  Hydrogen Sulfide (A4)  Corganic Bodies (A6) (LRR P, T, U)  Corganic Bodies (A6) (LRR P, T, U)  House All Care Body Matrix (F3)  Depleted Dark Surface (F7)  Redox Depressions (F8)  Hydrogen Sulface (A10) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Mothic (F17) (MLRA 151)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F17) (MLRA 151)  Iron-Manganese Masses (F12) (LRR P, T, U)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histosol (A2)  Hydrogen Sulfide (A4)  Corganic Bodies (A6) (LRR P, T, U)  Corganic Bodies (A6) (LRR P, T, U)  House All Care Body Matrix (F3)  Depleted Dark Surface (F7)  Redox Depressions (F8)  Hydrogen Sulface (A10) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Mothic (F17) (MLRA 151)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Mucky Mineral (S1) (LRR O, S)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F13) (LRR P, T, U)  Depleted Ochric (F17) (MLRA 151)  Iron-Manganese Masses (F12) (LRR P, T, U)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A2) Histosol (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A6) Hydrogen Sulfide (A7) Hydrogen Sulfide (A8) Hydric Soil Present? Yes X No
Histosol (A1)
Histic Epipedon (A2)    Histic Epipedon (A2)
Black Histic (A3)
Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  Muck Presence (A8) (LRR U)  Depleted Dark Surface (F7)  Marl (F10) (LRR U)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Sandy Redox (S5)  Detail Dark Surface (F18) (MLRA 150A)  Stripped Matrix (S6)  Depleted Dark Surface (F19) (MLRA 150A)  Depleted Dark Surface (F11) (MLRA 150A)  Depleted Dark Surface (F12) (LRR O, P, T)  Depleted Depleted Ochric (F11) (MLRA 151)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Loamy Soils (F20)  (MLRA 153B)  Red Parent Material (TF2)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Other (Explain i
Stratified Layers (A5)
Organic Bodies (A6) (LRR P, T, U)  Som Mucky Mineral (A7) (LRR P, T, U)  Depleted Dark Surface (F6)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox Depressions (F8)  Wery Shallow Dark Surface (F12)  Other (Explain in Remarks)  Other (Explain in Remarks)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Sandy Redox (S5)  Delta Ochric (F17) (MLRA 150A, 150B)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Hydric Soil Present? Yes X No
5 cm Mucky Mineral (A7) (LRR P, T, U)
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12)    1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)    Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)    Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of hydrophytic vegetation and Wetland hydrology must be present, Umbric Surface (F13) (LRR P, T, U) Wetland hydrology must be present, Undersonable Ochric (F17) (MLRA 151) Unless disturbed or problematic.    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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)    Dark Surface (S7) (LRR P, S, T, U)    Restrictive Layer (if observed):    Type: None
☐ 1 cm Muck (A9) (LRR P, T) ☐ Marl (F10) (LRR U) ☐ Other (Explain in Remarks)   ☐ Depleted Below Dark Surface (A11) ☐ Depleted Ochric (F11) (MLRA 151)   ☐ Thick Dark Surface (A12) ☐ Iron-Manganese Masses (F12) (LRR O, P, T) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, wetland hydrology must be present, unless disturbed or problematic.   ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)   ☐ Dark Surface (S7) (LRR P, S, T, U)    Restrictive Layer (if observed):  Type: None  Depth (inches): Hydric Soil Present? Yes X No
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed): Type: None Depth (inches):  Depth (inc
Thick Dark Surface (A12)
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present, unless disturbed or problematic.  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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Restrictive Layer (if observed):  Type: None  Depth (inches): Hydric Soil Present? Yes X No
Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None  Depth (inches):  Deta Ochric (F17) (MLRA 151)  unless disturbed or problematic.  Reduced Vertic (F18) (MLRA 150A, 150B)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Hydric Soil Present? Yes X No
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed): Type: None Depth (inches):  Hydric Soil Present? Yes X No
Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):  Type: None Depth (inches): Hydric Soil Present? Yes X No
Dark Surface (S7) (LRR P, S, T, U)    Restrictive Layer (if observed):   Type: None
Restrictive Layer (if observed):           Type:         None           Depth (inches):         Hydric Soil Present? Yes X No
Type:         None           Depth (inches):         Hydric Soil Present? Yes X No
Depth (inches):            Hydric Soil Present?         Yes X         No
Remarks:

Project/Site: Glassboro-Camo	den Line	City/C	ounty: Glouces	ster	Sampling Date: 9	/19/13
Applicant/Owner: DRPA/NJT			, <u> </u>	ster State: NJ	Sampling Point: V	VWY-A U
Investigator(s): DD, MF		Section		nge: Woodbury City		
Landform (hillslope, terrace, etc.					Slope	(%):
Subregion (LRR or MLRA): ML	RA 149A	Lat: 39°50'31.1	9"N	Long: 75° 8'46.34"W	Datu	m. NAD 1983
Soil Map Unit Name: Freehold	sandy loam, 10 to 1	5 percent slopes	. '	NWI classifica	tion: N/A	
Are climatic / hydrologic conditio						
				"Normal Circumstances" pr		Na
Are Vegetation, Soil				•		NO
Are Vegetation, Soil				eeded, explain any answer		
SUMMARY OF FINDINGS	S – Attach site ma	ap showing sam	pling point l	ocations, transects,	important fea	tures, etc.
Hydrophytic Vegetation Preser	nt? Yes	No X				
Hydric Soil Present?	Yes	No X	Is the Sampled within a Wetlan		No X	
Wetland Hydrology Present?	Yes	No X No X	within a wellai	nar res	NO	
Remarks:						
HYDROLOGY						
Wetland Hydrology Indicator		-11 4b -4 b A		Secondary Indicat	•	<u>vo required)</u>
Primary Indicators (minimum o				Surface Soil C		f (D0)
Surface Water (A1) High Water Table (A2)		atic Fauna (B13) I Deposits (B15) <b>(LRF</b>	D 11/	Sparsely Vegi	etated Concave Su	лтасе (вв)
Saturation (A3)		rogen Sulfide Odor (C		Moss Trim Lir		
Water Marks (B1)		dized Rhizospheres al			Vater Table (C2)	
Sediment Deposits (B2)		sence of Reduced Iron		Crayfish Burro		
Drift Deposits (B3)		ent Iron Reduction in	Tilled Soils (C6)	Saturation Vis	sible on Aerial Imaç	gery (C9)
Algal Mat or Crust (B4)		Muck Surface (C7)		Geomorphic F	` ,	
Iron Deposits (B5)		er (Explain in Remark	ss)	☐ Shallow Aquit	` '	
Inundation Visible on Aeria				FAC-Neutral		N.
☐ Water-Stained Leaves (B9 Field Observations:	)			<u> </u>	oss (D8) <b>(LRR T, l</b>	)
Surface Water Present?	Yes No _X	Denth (inches):				
Water Table Present?	Yes No _x					
Saturation Present?	Yes No			etland Hydrology Present	? Yes	No X
(includes capillary fringe)				a) if available:	<u></u>	
Describe Recorded Data (strea	ım gauge, monitoring w	ell, aeriai pnotos, pre	vious inspections	s), if available:		
Remarks:						
Nomano.						

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

	mes of pl	anis.		Sampling Point: WWY-A U
	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species
1. Salix nigra	40	<u>Y</u>	OBL	That Are OBL, FACW, or FAC: $\frac{5}{}$ (A)
2. Acer rubrum	25	<u>Y</u>	FAC	Total Number of Dominant
3. Albizia lebbeck	15	<u>N</u>	UPL	Species Across All Strata: 6 (B)
4. Juglans nigra	10	N	UPL	
5.				Percent of Dominant Species That Are OBL FACW or FAC: 83% (A/B
6.				That Are OBL, FACW, or FAC: 83% (A/B)
				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				OBL species 40 x 1 = 40
		= Total Cov		FACW species 10
50% of total cover: 45	20% of	total cover:	18	FAC species 100 x 3 = 300
Sapling/Shrub Stratum (Plot size: 15' )				
1. Lonicera japonica	10	Υ	FAC	
2				UPL species 25 x 5 = 125
3.				Column Totals: <u>235</u> (A) <u>725</u> (B)
4				
				Prevalence Index = B/A = 3.0
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>
	10	= Total Cov	er	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: 5	20% of	total cover:	2	
Herb Stratum (Plot size: 5' )				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1 Lolium perenne	45	Υ	FACU	be present, unless disturbed or problematic.
2. Duchesnea indica	15	N	FACU	Definitions of Four Vegetation Strata:
3. Persicaria pennsylvanicum	10	N	FACW	Definitions of Four Vegetation Strata.
·				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o
4				more in diameter at breast height (DBH), regardless of
5	<del></del>			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
9.				of size, and woody plants less than 3.28 ft tall.
40	• • • • • • • • • • • • • • • • • • • •			
				<b>Woody vine</b> – All woody vines greater than 3.28 ft in
11	·			height.
12	70			
0.5		= Total Cov		
50% of total cover: 35	20% of	total cover:	14	
		Υ	FAC	
	45			
1. Vitis vulpina	45 20	Y	FAC	
Vitis vulpina     Lonicera japonica	20	Y	FAC	
Vitis vulpina     Lonicera japonica  3.	20	<u>Y</u>	FAC	
Woody Vine Stratum (Plot size: 15' )  1. Vitis vulpina 2. Lonicera japonica 3	20	Y	FAC	
Vitis vulpina     Lonicera japonica  3.	20			Hydrophytic
1. Vitis vulpina 2. Lonicera japonica 3	65	= Total Cov	er	Hydrophytic Vegetation Present? Yes No X

SOIL Sampling Point: WWY-A U

	-	e to the de	oth needed to docu			or confire	n the absence of	indicators.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remai	rke
0-5	10YR 3/3	100	<u>Color (moist)</u>		Турс		Sand	rtemai	N3
5-12	10YR 3/3	70	7.5YR 6/4	30			Sand		
3-12	1011 3/3		7.510 0/4			- IVI	Sanu		
									_
									_
1Tuno: C=C	concentration D-De	nlotion DM	=Reduced Matrix, M	S-Mooko	d Sand C	roino	<sup>2</sup> L coation: D	L=Pore Lining, M=N	Actrix
			LRRs, unless othe			iairis.		or Problematic Hyd	
Histoso			Polyvalue B			LRR S. T.		ck (A9) <b>(LRR O)</b>	
	pipedon (A2)		Thin Dark S					ck (A10) (LRR S)	
_	istic (A3)		Loamy Muck						ide MLRA 150A,B)
	en Sulfide (A4)		Loamy Gley		(F2)			t Floodplain Soils (I	, , , , , ,
_	d Layers (A5)		Depleted Ma		<b>5</b> 0)			us Bright Loamy So	oils (F20)
	: Bodies (A6) <b>(LRR</b> ucky Mineral (A7) <b>(I</b>		Redox Dark ) Depleted Da	,	,		(MLRA	. 153B) ent Material (TF2)	
_	resence (A8) <b>(LRR</b>		Redox Depr					allow Dark Surface	(TF12)
	uck (A9) <b>(LRR P, T</b>		Marl (F10) (I		٠,			xplain in Remarks)	()
	d Below Dark Surfa		Depleted Oc	hric (F11	(MLRA	51)			
· =	ark Surface (A12)		☐ Iron-Mangar		, ,	•	•	ors of hydrophytic v	•
. =	Prairie Redox (A16)		. =		-	-		nd hydrology must l	·
	Mucky Mineral (S1) Gleyed Matrix (S4)	(LKK U, S)	☐ Delta Ochrid ☐ Reduced Ve		-			s disturbed or probl	ematic.
_	Redox (S5)		Piedmont Fl				•		
	d Matrix (S6)						RA 149A, 153C, 1	53D)	
	urface (S7) <b>(LRR P,</b>								
	Layer (if observed	l):							
Type: No			<del></del>						V
	iches):						Hydric Soil Pi	resent? Yes	No X
Remarks:									

Project/Site: Glassboro-Camden LIn	ie	City/C	ounty: Gloucester		Sampling Date:	9/19/2013
Applicant/Owner: DRPA/NJT			ounty: Gloucester	State: NJ	Sampling Point:	WWH-A W
Investigator(s): DD, MF			on, Township, Range:			'
	ression	Local	relief (concave, conve	x, none): concave	Slo	pe (%): 0-2%
Subregion (LRR or MLRA): MLRA 149	)A	Lat: 39°48'52.4	5"N Long:	75° 9'4.47"W	 Da	atum: NAD 1983
Landform (hillslope, terrace, etc.): Depi Subregion (LRR or MLRA): MLRA 149 Soil Map Unit Name: Fluvaquents, loa	amy, 0 to 3 pe	ercent slopes, frequ	ently flooded	NWI classific	cation: PFO1C	•
Are climatic / hydrologic conditions on the						
Are Vegetation, Soil, or I						No
Are Vegetation, Soil, or I						
SUMMARY OF FINDINGS – A						eatures, etc.
Lhudwanhudia Vanatatian Duaganto	X	Na	<u> </u>			
Hydrophytic Vegetation Present?	Yes X	_ No	Is the Sampled Are			
Hydric Soil Present? Wetland Hydrology Present?	Yes X	No	within a Wetland?	Yes <u>^</u>	No	_
Remarks:		I.				
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum o	f two required)
Primary Indicators (minimum of one is	required; check	all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)		atic Fauna (B13)			getated Concave	Surface (B8)
High Water Table (A2)		Deposits (B15) (LRF		Drainage Pa		
Saturation (A3)		rogen Sulfide Odor (C	•	☐ Moss Trim L		
Water Marks (B1) Sediment Deposits (B2)		sence of Reduced Iro	long Living Roots (C3)	Crayfish Bur	Water Table (C2)	)
Drift Deposits (B3)		ent Iron Reduction in	, ,		isible on Aerial In	nagery (C9)
Algal Mat or Crust (B4)	_	Muck Surface (C7)	()		Position (D2)	
Iron Deposits (B5)		er (Explain in Remark	s)	Shallow Aqu	itard (D3)	
☐ Inundation Visible on Aerial Image				FAC-Neutral	Test (D5)	
Water-Stained Leaves (B9)				Sphagnum r	noss (D8) <b>(LRR 1</b>	Γ, U)
Field Observations:	Y					
		Depth (inches):				
		Depth (inches):		d Hydrology Presei	nt? Yes X	No
(includes capillary fringe)					itr res	
Describe Recorded Data (stream gaug	e, monitoring w	ell, aerial photos, pre	vious inspections), if a	vailable:		
Remarks:						
Moist Woods						
livered vicede						

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

001		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30'  1. Liriodendron tulipifera	% Cover 90	Species? Y	Status FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2. Acer rubrum	70	Y	FAC	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8	400			OBL species $0 \times 1 = 0$
60		= Total Cov		FACW species $35$ $\times 2 = 70$
	20% of	total cover:		FAC species 155 x 3 = 465
Sapling/Shrub Stratum (Plot size: 15' )  1. Rosa multiflora	30	Υ	FACU	FACU species 150 x 4 = 600
1. Indea mutiliora 2. Lindera benzoin	20	<u>'</u>	FACW	UPL species $0 \times 5 = 0$
	10		FAC	Column Totals: 340 (A) 1135 (B)
3. Viburnum dentatum				
4. Sassafras albidum	5	N	FACU	Prevalence Index = B/A = 2.99
5. Ilex opaca	5	<u>N</u>	FAC	Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				<b>2</b> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Cov		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: <u>32.5</u>	20% of	total cover:	13	
Herb Stratum (Plot size: 5'  1. Lonicera japonica	20	Υ	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 Onoclea sensibilis	15	N	FACW	Definitions of Four Vegetation Strata:
3.				_
				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
4.         5.				height.
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				<b>Herb</b> – All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12.				
	35	= Total Cov	er	
50% of total cover: <u>17.5</u>		total cover:		
Woody Vine Stratum (Plot size: 30' )				
1. Lonicera japonica	50	Υ	FAC	
2 Parthenocissus quinquefolia	25	Y	FACU	
3.				
4.				
5.				
·	75	= Total Cov	er	Hydrophytic Vegetation
50% of total cover: 37.5		total cover:		Present? Yes X No
·		total cover:		
Remarks: (If observed, list morphological adaptations belo	w).			

Sampling Point: WWH-A W

SOIL Sampling Point: WWH-A W

	-	e to the de <sub>l</sub>				or confir	m the absence of in	dicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-5	5Y 2.5/1	100	<u>Color (moist)</u>		Турс		TOXIGIO	remand
5-20	7.5YR 3/1	98	7.5YR 4/6	2		- <u></u> PL	silt loam	
3-20	7.511(3/1	_ =	7.5111 4/0				Silt IOaiii	
				_	_	_	<u> </u>	
					_		·	
1Type: C=C	oncentration D=De	nletion RM	=Reduced Matrix, M	S-Masko	d Sand G	raine	<sup>2</sup> Location: PL=	Pore Lining, M=Matrix.
			LRRs, unless othe			iaiiis.		Problematic Hydric Soils <sup>3</sup> :
☐ Histosol			Polyvalue Be		•	LRR S. T.		(A9) <b>(LRR O)</b>
	oipedon (A2)		Thin Dark S				· —	(A10) (LRR S)
I <b>=</b>	istic (A3)		Loamy Muck	-		R 0)		ertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gley		(F2)			loodplain Soils (F19) (LRR P, S, T)
	d Layers (A5) Bodies (A6) <b>(LRR</b>	D T II)	Depleted Ma		F6)			Bright Loamy Soils (F20)
	ucky Mineral (A7) <b>(I</b>		=	•	,		(MLRA 15	Material (TF2)
	esence (A8) (LRR		Redox Depre					w Dark Surface (TF12)
	ıck (A9) <b>(LRR P, T</b> )		Marl (F10) <b>(I</b>		,		Other (Expl	ain in Remarks)
	d Below Dark Surfa	ce (A11)	Depleted Oc			•	2	
l <b>=</b>	ark Surface (A12)	/MI DA 450	Iron-Mangar		. ,	•	•	of hydrophytic vegetation and
_	rairie Redox (A16) lucky Mineral (S1)	-	A) Umbric Surfa Delta Ochric		-	-		hydrology must be present, isturbed or problematic.
_	Gleyed Matrix (S4)	(LIXIX O, 3)	Reduced Ve		-			isturbed or problematic.
_	Redox (S5)		Piedmont Fl				•	
I <b>=</b>	l Matrix (S6)		Anomalous I	Bright Loa	amy Soils	(F20) <b>(ML</b> I	RA 149A, 153C, 153	D)
	rface (S7) (LRR P,							
	Layer (if observed	):						
Type: No								X N
	ches):						Hydric Soil Pres	ent? Yes X No
Remarks:								

Project/Site: Glassboro-Camden Line	City/County: Glou	cester	Sampling Date: 9/19/2013
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WWH-A U
Investigator(s): DD, MF	Section, Township,	Range: Woodbury Heigl	nts
Landform (hillslope, terrace, etc.): hillslope	Local relief (concav	re, convex, none): none	Slope (%): 0-2
	.at: <u>39°48'52.68"N</u>	Long: <u>75° 9'5.65"W</u>	Datum: NAD 19
Soil Map Unit Name: Fluvaquents, loamy, 0 to 3 pe	rcent slopes, frequently	flooded NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes N	o (If no, explain in Re	emarks.)
		are "Normal Circumstances" p	resent? Yes 🗸 No
		If needed, explain any answer	
SUMMARY OF FINDINGS – Attach site map			
Sommart or Findings - Attach site map		it locations, transects	, important leatures, etc.
Hydrophytic Vegetation Present? Yes N	o Is the Samp	oled Area	
Hydric Soil Present? Yes N	o within a We		No ✓
Wetland Hydrology Present? Yes N	∘ ✓		
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surface Soil	
Surface Water (A1) Aquatic	Fauna (B13)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2) Marl De	posits (B15) (LRR U)	Drainage Pat	3.00
Saturation (A3) Hydroge	en Sulfide Odor (C1)	Moss Trim Li	nes (B16)
<u> </u>	d Rhizospheres along Living Ro	oots (C3) Dry-Season \	Vater Table (C2)
	e of Reduced Iron (C4)	Crayfish Burr	` '
	Iron Reduction in Tilled Soils (C	· —	sible on Aerial Imagery (C9)
	ck Surface (C7) Explain in Remarks)	Geomorphic Shallow Aqui	, ,
Inundation Visible on Aerial Imagery (B7)	.xpiaiii iii Nemaiks)	FAC-Neutral	` '
Water-Stained Leaves (B9)			oss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No Po	oth (inches):		
Water Table Present? Yes No V De	oth (inches):		
	oth (inches):	Wetland Hydrology Presen	t? Yes No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, a	aerial photos, previous inspecti	ions), if available:	
December (Colonia Data (Colonia Gauge, Melinelli, Colonia Gauge, Colonia Gau	acrial priotoc, provided moposit	one, il aranabie.	
Remarks:			

Sampling	Point:	WWH-A	U

20'	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
<sub>1.</sub> Acer platanoides	45	<u>Y</u>	<u>UPL</u>	That Are OBL, FACW, or FAC: 3 (A)
2. Liquidambar styraciflua		<u>Y</u>		Total Number of Dominant 5
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 60% (A/B)
6				
	90	= Total Co	/or	Prevalence Index worksheet:
50% of total cover: 45				Total % Cover of: Multiply by:
	20% 0	r total cover	; <del></del>	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 15')				FACW species 20 x 2 = 40
1. Acer platanoides	15	<u>Y</u>	<u>UPL</u>	
2.				The species
				FACU species 0 x 4 = 0
3				UPL species 60 x 5 = 300
4				Column Totals: 215 (A) 745 (B)
5				Column Totals. 210 (A) 111 (B)
6				Prevalence Index = B/A = 3.4
	15	= Total Cov	/er	Hydrophytic Vegetation Indicators:
50% of total cover: 7.5	20% o	f total cover	- 3	I <del></del>
Shrub Stratum (Plot size: 15' )				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
1,				3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				
4,				Its for the set of the
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				
6				Definitions of Five Vegetation Strata:
		= Total Co	/er	Tree - Woody plants, excluding woody vines,
50% of total cover:	20% o	f total cover	:	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1 Alliaria petiolata	20	Υ	FACW	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2				than 3 in. (7.6 cm) DBH.
3				and the control of th
4				Shrub – Woody plants, excluding woody vines,
5.				approximately 3 to 20 ft (1 to 6 m) in height.
e				Herb - All herbaceous (non-woody) plants, including
-				herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10				Woody vine - All woody vines, regardless of height.
11	20			
		= Total Co		
50% of total cover: 10	20% o	f total cover	: <u>4</u>	
Woody Vine Stratum (Plot size: 30')				
1. Lonicera japonica	85	Υ	FAC	
2 Toxicodendron radicans	5	$\overline{N}$	FAC	
3				
4				
5				Hydrophytic
	90	= Total Cov	/er	Vegetation
50% of total cover: 45	20% o	f total cover	: <u>18</u>	Present? Yes No
Remarks: (If observed, list morphological adaptations belo	_			
Transmist (ii anantraa, iia tila pilalagian dadpianata ben	··· /·			

Sampling Point: WWH-A U

Profile Des	cription: (Describe	to the depth	needed to docur	nent the inc	licator or con	firm the absence of indicate	ors.)
Depth	Matrix			x Features		_	
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup> Loc	Texture	Remarks
0-3	10YR 3/1	<u> 100</u> _				<u>Loam</u>	
3-20	10YR 3/2	100				Loam	
¹Twne: C=C	oncentration, D=De	pletion PM=F	Peduced Matrix M	S=Masked S	and Grains	<sup>2</sup> Location: PL=Pore L	ining M=Matrix
	Indicators: (Appli					Indicators for Proble	
Histosol					(S8) (LRR S,		-
_	pipedon (A2)				LRR S, T, U)	2 cm Muck (A10)	
	istic (A3)		Loamy Muck			, ,	18) (outside MLRA 150A,B)
11	en Sulfide (A4)		Loamy Gleye				ain Soils (F19) (LRR P, S, T)
Stratifie	d Layers (A5)		Depleted Ma	trix (F3)		Anomalous Bright	Loamy Soils (F20)
1 1 -	Bodies (A6) (LRR I		Redox Dark	Surface (F6)		(MLRA 153B)	
	icky Mineral (A7) <b>(L</b>		Depleted Da		7)	Red Parent Mater	
17 1	resence (A8) (LRR		Redox Depre			Very Shallow Dar	
	ick (A9) (LRR P, T)		Marl (F10) (L			Other (Explain in	Remarks)
	d Below Dark Surfa ark Surface (A12)	ce (A11)	Depleted Oc			D T) 3ladicators of bu	drophytic vegetation and
	rairie Redox (A16) (	MIRA 150A)			(F12) (LRR C		ogy must be present,
	Mucky Mineral (S1)		Delta Ochric				ed or problematic.
	Gleyed Matrix (S4)	Likik O, O,	1 1		LRA 150A, 15		od or problematic.
	Redox (S5)				s (F19) (MLR		
Stripped	Matrix (S6)		Anomalous E	Bright Loamy	Soils (F20) (F	ILRA 149A, 153C, 153D)	
	rface (S7) (LRR P,						
Restrictive	Layer (if observed	):					
Туре: _N	one		_				
Depth (in	ches):		_			Hydric Soil Present?	YesNo
Remarks:						'	

Project/Site: Glassboro-Camo	den LIne	City/C	ounty: Gloucester		Sampling Date	8/29/2013
Applicant/Owner: DRPA/NJT			ounty: Gloucester	State: NJ	Sampling Point	WDP-A W
Investigator(s): DD, MF			on, Township, Range: _			
Landform (hillslope, terrace, etc.			relief (concave, conve			ope (%): 0-2%
Subregion (LRR or MLRA): ML	RA 149A	Lat: 39°48'12.6	2"N Long:	75° 9'4.39"W	D	atum: NAD 1983
Subregion (LRR or MLRA): ML Soil Map Unit Name: Freehold san	dy Ioam 15-25% slopes, Freeho	old loamy sand 5-10% slope	es, Fluvaquents, Ioamy, 0-3%	slopes NWI classifi	cation: N/A	
Are climatic / hydrologic conditio						
Are Vegetation, Soil						( No
Are Vegetation, Soil				, explain any answ		110
SUMMARY OF FINDING						footuroo oto
JOININANT OF FINDING			ipinig point locat	ions, transect	s, important i	eatures, etc.
Hydrophytic Vegetation Preser	nt? Yes X	No	Is the Sampled Area	1		
Hydric Soil Present?	Yes X	No	within a Wetland?		No	
Wetland Hydrology Present?  Remarks:	Yes X	No				
HYDROLOGY						
Wetland Hydrology Indicator		-II 4b -4 b A		_	ators (minimum o	of two required)
Primary Indicators (minimum o					l Cracks (B6)	Surface (D9)
Surface Water (A1) High Water Table (A2)		atic Fauna (B13) Deposits (B15) <b>(LRF</b>	5 11/		egetated Concave atterns (B10)	Surface (Bo)
Saturation (A3)		rogen Sulfide Odor (0	•	Moss Trim L		
Water Marks (B1)		- '	long Living Roots (C3)	=	Water Table (C2	2)
Sediment Deposits (B2)	Pres	ence of Reduced Iro	n (C4)	Crayfish Bu	rrows (C8)	
Drift Deposits (B3)		ent Iron Reduction in	Tilled Soils (C6)	Saturation \	/isible on Aerial Ir	magery (C9)
Algal Mat or Crust (B4)	_	Muck Surface (C7)			Position (D2)	
☐ Iron Deposits (B5)	· · · · · · · · · · · · · · · · · · ·	er (Explain in Remark	s)	☐ Shallow Aqu	,	
Inundation Visible on Aeria Water-Stained Leaves (B9	<b>o</b> , ( ,			FAC-Neutra	moss (D8) <b>(LRR</b> <sup>-</sup>	T 11)
Field Observations:	<u>')                                    </u>			<u> </u>	illoss (Do) (LKK	1, 0)
Surface Water Present?	Yes No X	Depth (inches):				
Water Table Present?	Yes X No					
Saturation Present?	Yes X No			Hydrology Prese	nt? Yes X	No
(includes capillary fringe)  Describe Recorded Data (streat	am gauge, monitoring w	all agrial photos pro	vious inspections) if a	vailable:		
Describe Recorded Data (stream	ani gauge, monitoring we	eli, aeriai priotos, pre	vious irispections), ir a	vallable.		
Remarks:						
Edge of stream						

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

tor Dominance Test worksheet:  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
—   Number of Dominant Species
That Are OBL, FACW, or FAC: 4 (A)
<del></del>
V     Total Number of Dominant
Species Across All Strata: 4 (B)
Percent of Dominant Species
That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index worksheet:
X 1 =
FACW species $\frac{50}{50}$ $\times 2 = \frac{100}{150}$
FAC species 50 x 3 = 150
FACU species $0 \times 4 = 0$
UPL species $0 \times 5 = 0$
Column Totals: <u>250</u> (A) <u>400</u> (B)
Prevalence Index = B/A = 1.6
Hydrophytic Vegetation Indicators:
—   ✓ 1 - Rapid Test for Hydrophytic Vegetation
—
3 - Prevalence Index is ≤3.0¹
Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Definitions of Four Vegetation Strata:
Deminions 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.
<del>-</del>
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
— Itali 3 III. DBIT and greater than 3.20 it (1 III) tali.
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.
<u> </u>
<u> </u>
_
_
_
— Hydrophytic
Vegetation
Present? Yes X No

SOIL Sampling Point: WDP-A W

Profile Des	cription: (Describe Matrix	e to the dept		ment the		or confir	m the absence of	indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-8	10YR 4/1	70	10YR 4/4	30	MS	M	SIS		
8-20	5Y 4/1	100					SIS		
							- <del></del>		
				_		-	· <del></del> -		
		·			-	-	<del></del>		
							<del></del>		
					_		. <u></u> -		
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM=	Reduced Matrix, M	- IS=Maske	d Sand G	rains.	<sup>2</sup> Location: Pl	L=Pore Lining, M=Matri	x.
	Indicators: (Appli							r Problematic Hydric S	
☐ Histoso	(A1)		Polyvalue B	elow Surfa	ace (S8) <b>(</b>	LRR S, T,	<b>U)</b> 1 cm Muc	ck (A9) <b>(LRR O)</b>	
_	pipedon (A2)		Thin Dark S					ck (A10) <b>(LRR S)</b>	
=	istic (A3)		Loamy Muc	-		R 0)		Vertic (F18) (outside N	
	en Sulfide (A4) d Layers (A5)		_ Loamy Gley ✓ Depleted Ma		(F2)			t Floodplain Soils (F19) us Bright Loamy Soils (I	
_	Bodies (A6) (LRR	P. T. U)	Redox Dark		F6)		(MLRA		-20)
	ucky Mineral (A7) <b>(I</b>		Depleted Da					ent Material (TF2)	
=	resence (A8) (LRR		Redox Depr		. ,		Very Sha	llow Dark Surface (TF1:	2)
	uck (A9) <b>(LRR P, T</b> )		☐ Marl (F10) <b>(</b>	•			U Other (Ex	oplain in Remarks)	
	d Below Dark Surfa	ce (A11)	Depleted Or		-	-	3		
=	ark Surface (A12)	/MI DA 450A	∐ Iron-Mangaı		, ,	•	•	ors of hydrophytic veget	
=	rairie Redox (A16) Jucky Mineral (S1)	-	) Umbric Surf Delta Ochric		-	-		nd hydrology must be pr s disturbed or problemat	
=	Gleyed Matrix (S4)	(LIKIT O, O)	Reduced Ve					s disturbed or problema	
	Redox (S5)		☐ Piedmont FI		-		•		
_	Matrix (S6)						RA 149A, 153C, 1	53D)	
	ırface (S7) <b>(LRR P,</b>								
	Layer (if observed	):							
Type: No								V	
Depth (in	ches):						Hydric Soil Pr	esent? Yes X	No
Remarks:									
ı									

Project/Site: Glassboro-Camden Line	City/County: Gloucester		Sampling Date: <u>8/29/2013</u>
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WDP-A U
Investigator(s): DD, MF	Section, Township, Range: D	eptford Townsh	nip
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex,		
		75° 9'4.39"W	Datum: NAD 19
Soil Map Unit Name: Freehold sandy loam 15-25% slopes			
Are climatic / hydrologic conditions on the site typical for this time of y	rear? Yes 🗸 No	(If no, explain in Re	emarks.)
		Il Circumstances" pr	
		explain any answers	s in Remarks.)
SUMMARY OF FINDINGS - Attach site map showin	g sampling point location	ons, transects,	important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?  Remarks:  Yes No   No   Remarks:	Is the Sampled Area within a Wetland?	Yes	No ✓
HYDROLOGY			
Wetland Hydrology Indicators:		Socondary Indicat	ors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<b>\</b>	Surface Soil C	
Surface Water (A1)  Aquatic Fauna (B	volume in the second se	- 100 MARIE	etated Concave Surface (B8)
High Water Table (A2)  Marl Deposits (B1		Drainage Patt	3 17
Saturation (A3) Hydrogen Sulfide	, , ,	Moss Trim Lin	
	heres along Living Roots (C3)	=	Vater Table (C2)
Sediment Deposits (B2) Presence of Redu	iced Iron (C4)	Crayfish Burro	ows (C8)
	ction in Tilled Soils (C6)	Saturation Vis	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surfac	e (C7)	Geomorphic F	osition (D2)
Iron Deposits (B5) Other (Explain in	Remarks)	Shallow Aquit	ard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral 1	rest (D5)
Water-Stained Leaves (B9)		Sphagnum mo	oss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No Depth (inche	s):		
Water Table Present? Yes No Depth (inche	s):		
Saturation Present? Yes No Depth (inche (includes capillary fringe)	s): Wetland I	Hydrology Present	? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if ava	ailable:	
Remarks:			
Nemarks.			

Sampling	Point:	WD	P-A	U

- 30'	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30'  Acer saccharum		Species?		Number of Dominant Species 5
	100	<u>Y</u>	FACU	That Are OBL, FACW, or FAC: 5 (A)
2. Salix nigra	50	<u>Y</u>	<u>OBL</u>	Total Number of Dominant
3. Platanus occidentalis		<u> N</u>		Species Across All Strata: 10 (B)
Acer negundo		<u> N</u>	<u>FAC</u>	Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 50 (A/B)
6				
	180	= Total Cov	/er	Prevalence Index worksheet:
50% of total cover: 90	20% o	f total cover	36	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15' )				OBL species 50 x 1 = 50
1				FACW species 25 x 2 = 50
2.				FAC species 95 x 3 = 285
3.				FACU species 140 x 4 = 560
4.				UPL species 40 x 5 = 200
				Column Totals: 350 (A) 1145 (B)
5				0.0
B				Prevalence Index = B/A = 3.2
		= Total Co		Hydrophytic Vegetation Indicators:
50% of total cover:	20% o	f total cover	-	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	40	V	UPL	2 - Dominance Test is >50%
1, Rubus allegheniensis	- 40	· <del>Y</del>	UPL	3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	40	= Total Co	/er	- Weststate autofassissis
50% of total cover: 20	20% o	f total cover	8	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5' )				(7.6 cm) or larger in diameter at breast height (DBH).
1. Urtica dioica	5	Υ	FAC	Seekleen Mineral value to more than the seekleen and the
2 Prunus serotina	5	<u>Y</u>	FACU	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3. Quercus alba	5	<u>'</u>	FACU	than 3 in. (7.6 cm) DBH.
Dichanthelium clandestinum	· <del>5</del>	<del>'</del>	FACW	Shrub – Woody plants, excluding woody vines,
T	· —		TACVV	approximately 3 to 20 ft (1 to 6 m) in height.
5				
6				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				Woody vine - All woody vines, regardless of height.
10				Woody vine - All woody vines, regardess of flagric.
11				
	20	= Total Co	/er	
50% of total cover: 10	20% o	f total cover	<u> 4</u>	
Woody Vine Stratum (Plot size: 15')				
1. Lonicera japonica	40	Υ	FAC	
2 Parthenocissus quinquefolia	40	<u> </u>	FAC	
3 Toxicodendron radicans	30	<u></u>	FACU	
		<u> </u>		
4				
5	110			Hydrophytic
55		= Total Co		Vegetation Present? Yes No
50% of total cover: 55		f total cover	:	
Remarks: (If observed, list morphological adaptations below	ow).			
Ground cover predominantly vines				

WDP-A U

OIL			Sampling Point:
Profile Description: (Describe to the depth needed to document th	e indicator or confirr	n the absence of ind	icators.)
Depth Matrix Redox Featu			
inches) Color (moist) % Color (moist) %		Texture	Remarks
0-20 <u>10YR 4/3</u> <u>100</u>		Sand	
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Mask	ed Sand Grains.	<sup>2</sup> Location: PL=P	ore Lining, M=Matrix.
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise n	oted.)		oblematic Hydric Soils <sup>3</sup> :
Histosol (A1) Polyvalue Below Sur	rface (S8) (LRR S, T,	U) 1 cm Muck (A	49) (LRR O)
Histic Epipedon (A2) Thin Dark Surface (5		. —	(10) (LRR S)
Black Histic (A3) Loamy Mucky Miner		,	tic (F18) (outside MLRA 150A,
Hydrogen Sulfide (A4) Loamy Gleyed Matri		Piedmont Flo	odplain Soils (F19) (LRR P, S,
Stratified Layers (A5) Depleted Matrix (F3)	)	Anomalous E	right Loamy Soils (F20)
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface	(F6)	(MLRA 153	(B)
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surfa	ce (F7)	Red Parent I	faterial (TF2)
Muck Presence (A8) (LRR U) Redox Depressions	(F8)		Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U)		Other (Expla	n in Remarks)
Depleted Below Dark Surface (A11) Depleted Ochric (F1	1) (MLRA 151)		
	sses (F12) (LRR O, P		of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13			ydrology must be present,
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (I			turbed or problematic.
	) (MLRA 150A, 150B		
	Soils (F19) (MLRA 1	•	
	oamy Soils (F20) (ML)	RA 149A, 153C, 153D	)
Dark Surface (S7) (LRR P, S, T, U) estrictive Layer (if observed):			
Type: None			
		I	
Depth (inches):		Hydric Soil Prese	nt? YesNo_
emarks:			

Project/Site: Glassboro-Camden Line	_ City/County: Gloucester Sampling Date: 8/	29/2013
Applicant/Owner: DRPA/NJT	State: NJ Sampling Point: W	/DP-B W
Investigator(s): DD, MF	Section, Township, Range: Deptford Township	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): Concave Slope	(%): <u>0-2</u>
	48'6.95"N Long: <u>75° 9'2.18"W</u> Datur	ո։ <u>NAD 19</u> {
Soil Map Unit Name: Freehold sandy loam 15-25% slopes	Freehold loamy sand, 5-1 NWI classification: NA	
Are climatic / hydrologic conditions on the site typical for this time of y	year? Yes No (If no, explain in Remarks.)	
	ly disturbed? Are "Normal Circumstances" present? Yes	No
	oroblematic? (If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, transects, important fea	tures, etc.
Hydrophytic Vegetation Present? Yes No	1	
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No	Is the Sampled Area	
Wetland Hydrology Present?	within a Wetland? Yes No	
Remarks:		
LIVEROLOGY		
HYDROLOGY	Consider Indicator (minimum of the	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply	Secondary Indicators (minimum of two) Surface Soil Cracks (B6)	o requirea)
Surface Water (A1)  Aquatic Fauna (B	Account to the second s	rface (R8)
High Water Table (A2)  Marl Deposits (B1		riace (DO)
Saturation (A3) Hydrogen Sulfide		
Water Marks (B1) Oxidized Rhizosp	oheres along Living Roots (C3) Dry-Season Water Table (C2)	
Sediment Deposits (B2)	uced Iron (C4) Crayfish Burrows (C8)	
	uction in Tilled Soils (C6) Saturation Visible on Aerial Imag	ery (C9)
Algal Mat or Crust (B4) Thin Muck Surfac		
Iron Deposits (B5) Other (Explain in		
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U	Λ
Field Observations:	Spriagrium moss (56) (ERR 1, 0	,
	ss): surface	
Water Table Present? Yes No Depth (inche		
		No
(includes capillary fringe)	too provious inspections) if available:	5000F 15
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), ii available.	
Remarks:		
Floodplain		

20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Quercus palustris	100	<u>Y</u>	<u>FACW</u>	That Are OBL, FACW, or FAC: 3 (A)
2. Liriodendron tulipifera	<u>60</u>	<u>Y</u>	<u>FACU</u>	Total Number of Denninant
3				Total Number of Dominant Species Across All Strata: 6 (B)
4.				
				Percent of Dominant Species That Are ORL EACW or EAC: 50
5				That Are OBL, FACW, or FAC: 50 (A/B)
6,	100			Prevalence Index worksheet:
00		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 80	20% of	total cover	32	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 15' )				140 x 1 = 0
1				FACW species 140 x 2 = 280
2.				FAC species 0 x 3 = 0
3.				FACU species 90 x 4 = 360
4.				UPL species 0 x 5 = 0
				Column Totals: 230 (A) 640 (B)
5				0.7
6,		= Total Cov		Prevalence Index = B/A = 2.7
enor er i				Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	10	Υ	FACU	2 - Dominance Test is >50%
1, Chionanthus virginicus				3 - Prevalence Index is ≤3.0 <sup>1</sup>
2, Clethra alnifolia			FACW	Problematic Hydrophytic Vegetation (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
		= Total Cov	er	
50% of total cover: 10				Tree – Woody plants, excluding woody vines,
	20% 0	total cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5' )	30	Υ	FACW	(1.0 only or migor in duminor at in out froight (2511).
1.Clethra alnifolia				Sapling - Woody plants, excluding woody vines,
2 Vaccinium angustifolium	20	<u>Y</u>	<u>FACU</u>	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3				tilali 5 ili. (7.6 cili) DBH.
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6.				Herb - All herbaceous (non-woody) plants, including
7.				herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9,				Woody vine - All woody vines, regardless of height.
10				
11				
		= Total Cov		
50% of total cover: 25	20% of	total cover	10	
Woody Vine Stratum (Plot size: 30')				
1				
2.				
3.				
4				
5				
J	0	Takat O		Hydrophytic Vegetation
		= Total Cov		Present? Yes No
50% of total cover:		total cover		
Remarks: (If observed, list morphological adaptations belo	W).			

Sampling Point: WDP-B W

SOIL

JOIL									impling Form.	
Profile Desc	ription: (Describe	to the dep	th needed to docun	ent the i	ndicator	or confirm	the absence	of indicator	rs.)	
Depth	Matrix		Redox	(Feature	s					
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	_Tvpe1	Loc <sup>2</sup>	Texture		Remarks	
0-3	10YR 2/1	100					SI			
3-16	10YR 3/2	90	10YR 4/6	10	MS	PL	S SI			
16-20	10YR 4/3	90	10YR 4/6	10	MS	PL	S			_
¹Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	=Masked	Sand Gr	ains.	<sup>2</sup> Location:	PL=Pore Lin	ning, M=Matri	x.
Hydric Soil I	ndicators: (Application	able to all	LRRs, unless other	wise not	ed.)				natic Hydric	
Histosol	(A1)		Polyvalue Be	low Surfa	ce (S8) (L	.RR S, T, U	J)1 cm N	luck (A9) (L	RR O)	
Histic Ep	ipedon (A2)		Thin Dark Su	rface (S9)	(LRR S,	T, U)	2 cm N	luck (A10) (I	LRR S)	
Black Hi	stic (A3)		Loamy Mucky	/ Mineral	(F1) (LRF	(0)	Reduc	ed Vertic (F1	18) (outside N	/ILRA 150A,B)
	n Sulfide (A4)		Loamy Gleye		F2)			-		(LRR P, S, T)
	Layers (A5)		Depleted Mat	· ·			_		Loamy Soils (	F20)
	Bodies (A6) (LRR P,		Redox Dark S					(A 153B)	L (TEO)	
	cky Mineral (A7) (LF		Depleted Dar				1 1	arent Materia	Surface (TF1	2)
	esence (A8) (LRR U ck (A9) (LRR P, T)	)	Marl (F10) (L		0)			Explain in R		2)
	Below Dark Surface	e (A11)	Depleted Och		(MLRA 1	51)	Other	Explain III N	emarks)	
	rk Surface (A12)	. ( ,	Iron-Mangane	, ,	7	r	T) <sup>3</sup> Indic	ators of hyd	rophytic veget	tation and
Coast Pr	airie Redox (A16) (N	ILRA 150A							gy must be pr	
Sandy M	lucky Mineral (S1) (L	.RR O, S)	Delta Ochric	(F17) (ML	RA 151)		unle	ss disturbed	d or problema	tic.
Sandy G	leyed Matrix (S4)		Reduced Ver	tic (F18) <b>(</b>	MLRA 15	0A, 150B)				
Sandy R	edox (S5)		Piedmont Flo	-	, ,		9A)			
_	Matrix (S6)		Anomalous B	right Loar	ny Soils (	F20) (MLR	A 149A, 153C,	153D)		
Dark Su	face (S7) (LRR P, S		Anomalous B	right Loar	ny Soils (	F20) (MLR	A 149A, 153C,	, 153D)		
Dark Sur Restrictive I	face (S7) (LRR P, S ayer (if observed):		Anomalous B	right Loar	ny Soils (	F20) (MLR	A 149A, 153C,	153D)		
Restrictive I	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			🗸	
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR	A 149A, 153C,		Yes 🗸	No
Restrictive I	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No
Restrictive I Type: No	face (S7) (LRR P, S ayer (if observed): One		Anomalous B	right Loar	ny Soils (	F20) (MLR			Yes	No

Project/Site: Glassboro-Camden Line	City/County: Glouce	ester	Sampling Date: <u>8/29/2013</u>
Applicant/Owner: DRPA/NJT		State: NJ s	Sampling Point: WDP-C W
Investigator(s): DD, MF	Section, Township, Ra	<sub>ange:</sub> Deptford Townsh	nip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave,	convex, none): Concave	Slope (%): 0-2
	9°48'21.51"N	Long: 75° 9'3.66"W	Datum: NAD 19
Soil Map Unit Name: Freehold loamy sand, 5 to 10 perce	ent slopes	NWI classifica	tion: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes 🗸 No	(If no, explain in Re	marks.)
Are Vegetation Soil or Hydrology significa	ntly disturbed? Are	"Normal Circumstances" pro	esent? Yes 🗸 No
		needed, explain any answers	
SUMMARY OF FINDINGS – Attach site map show			
	<b>1</b>	## ### ###############################	42 42
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No	Is the Sample		, — l
Wetland Hydrology Present?	within a Wetla	and? Yes	_ No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)
Primary Indicators (minimum of one is required; check all that ap	oly)	Surface Soil C	racks (B6)
Surface Water (A1)  Aquatic Fauna	(B13)	Sparsely Vege	etated Concave Surface (B8)
High Water Table (A2)  Marl Deposits	B15) (LRR U)	Drainage Patte	erns (B10)
Saturation (A3) Hydrogen Sulfi		Moss Trim Lin	1 1
<u></u>	spheres along Living Root	M. M	/ater Table (C2)
	educed Iron (C4)	Crayfish Burro	` ′
Drift Deposits (B3) Recent Iron Re Algal Mat or Crust (B4) Thin Muck Sur	duction in Tilled Soils (C6)	Geomorphic P	ible on Aerial Imagery (C9)
Iron Deposits (B5) Other (Explain		Shallow Aquite	, ,
Inundation Visible on Aerial Imagery (B7)	,	FAC-Neutral T	` '
Water-Stained Leaves (B9)		Sphagnum mo	oss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No Depth (inc	hes): <u>1-3</u>		
Water Table Present? Yes No Depth (inc			
Saturation Present? Yes No Depth (inc	hes): surface w	etland Hydrology Present	? Yes No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial p	hotos, previous inspection	is), if available:	
Remarks:			
Depth of water increases as it becomes open water	(pond)		

0.01	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1, Acer rubrum	<u>100</u>	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 3 (A)
2				
3.				Total Number of Dominant Species Across All Strata: 4 (B)
				Species Across All Strata. (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 75 (A/B)
6				Barrelon a la deconsolada de de
	100	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 50	20% of	total cover:	20	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15'				OBL species x 1 =
1				FACW species 90 x 2 = 180
				FAC species 100 x 3 = 300
2				FACU species 35 x 4 = 140
3				UPL species x 5 =
4				000
5				Column Totals: <u>225</u> (A) <u>620</u> (B)
6				Prevalence Index = B/A = 2.7
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	_			2 - Dominance Test is >50%
1 Clethra alnifolia	45	<u>Y</u>	FACW	
				3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
	45	= Total Cov	er	
50% of total cover: 22.5			_	Tree – Woody plants, excluding woody vines,
	20% 01	total cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5'	45	V		(7.5 dill) di laigdi ili dialitete al biologii (bbil).
1. Clethra alnifolia	45	<u>Y</u>	FACW	Sapling - Woody plants, excluding woody vines,
2 Dryopteris marginalis	20	<u>Y</u>	<u>FACU</u>	approximately 20 ft (6 m) or more in height and less
3. Dendrolycopodium obscurum	15	<u>N</u>	<u>FACU</u>	than 3 in. (7.6 cm) DBH.
4.				Shrub - Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9,				
10				Woody vine - All woody vines, regardless of height.
11.				
	75	= Total Cov	or	
50% of total cover: 37.5				
50% of total cover: 67.0	20% or	total cover:	13	
Woody Vine Stratum (Plot size: 30' )				
1				
2				
3				
4.				
5				l
J	0	Total Con		Hydrophytic Vegetation
500/ of total agreem		= Total Cov		Present? Yes No
50% of total cover:		total cover:		
Remarks: (If observed, list morphological adaptations below	w).			

Sampling Point: WDP-C W

SOIL

Profile Desc	ription: (Describe	to the depti	n needed to docum	ent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			Feature		12		S
(inches) 0-4	Color (moist) 10YR 4/1	<del>%</del> -	Color (moist) 10YR 4/6	20	MS	M Loc²	<u>Texture</u> SI S	Remarks
4-20		95	10YR 4/6	5	MS MS		313	
4-20	2.5YR 4/1	. 95 -	101111 4/0	<u> </u>	<u> </u>	<u>PL</u>		
					- —			
	oncentration, D=Dep					ains.		PL=Pore Lining, M=Matrix.
I —	Indicators: (Applic	able to all L			-			for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1) pipedon (A2)		Polyvalue Bel Thin Dark Sur				- —	uck (A9) (LRR O) uck (A10) (LRR S)
	stic (A3)		Loamy Mucky	-			I F	ed Vertic (F18) (outside MLRA 150A,B)
Hydroge	n Sulfide (A4)		Loamy Gleye					ont Floodplain Soils (F19) (LRR P, S, T)
	1 Layers (A5)		✓ Depleted Mate	, ,			_	lous Bright Loamy Soils (F20)
1	Bodies (A6) (LRR P icky Mineral (A7) (LF		Redox Dark S	,				A 153B) rent Material (TF2)
	esence (A8) (LRR U		Depleted Dari				1 1	nallow Dark Surface (TF12)
	ick (A9) (LRR P, T)	,	Marl (F10) (LI		0,			Explain in Remarks)
	d Below Dark Surfac	e (A11)	Depleted Och		-			
	ark Surface (A12)		Iron-Mangane					ators of hydrophytic vegetation and
	rairie Redox (A16) (N fucky Mineral (S1) (L		Umbric Surface Delta Ochric (			, u)		and hydrology must be present, ss disturbed or problematic.
	eleyed Matrix (S4)	0, 0,	Reduced Vert		-	50A, 150B)		33 distribut of proportitute.
	ledox (S5)		Piedmont Floo	-				
	Matrix (S6)		Anomalous B	right Loa	my Soils	F20) (MLR	A 149A, 153C,	153D)
	rface (S7) (LRR P, S Layer (if observed):							
Type: No								
Depth (in							Hydric Soil I	Present? Yes No No
Remarks:								

Project/Site: Glassboro-Camden Line	City/County: Gloucester		Sampling Date: 8/29/2013
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WDP-C U
Investigator(s): DD, MF	Section, Township, Range:	Deptford Towns	hip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, conve	x, none): None	Slope (%): <u>0-2</u>
	18'21.51"N Long:	75° 9'3.66"W	Datum: NAD 19
Soil Map Unit Name: Freehold loamy sand, 5 to 10 percent	slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes 🗸 No	(If no, explain in Re	
Are Vegetation Soil or Hydrology significantl	y disturbed? Are "Norn	nal Circumstances" p	resent? Yes V No
		I, explain any answer	
SUMMARY OF FINDINGS – Attach site map showin			
	1	<u> </u>	<u> </u>
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area	a	I
Hydric Soil Present?  Wetland Hydrology Present?  Yes  No  V	within a Wetland?	Yes	No _✓
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	0	Surface Soil	Cracks (B6)
Surface Water (A1) Aquatic Fauna (B	13)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2)  Marl Deposits (B1	5) (LRR U)	Drainage Pat	terns (B10)
Saturation (A3) Hydrogen Sulfide	3 6	Moss Trim Li	
	heres along Living Roots (C3)		Nater Table (C2)
Sediment Deposits (B2)  Presence of Redu  Presence of Redu	, ,	Crayfish Burr	` ′
Drift Deposits (B3) Recent Iron Redu  Algal Mat or Crust (B4) Thin Muck Surfac	ction in Tilled Soils (C6)	Geomorphic	sible on Aerial Imagery (C9)
Iron Deposits (B5) Other (Explain in		Shallow Aqui	, ,
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	` '
Water-Stained Leaves (B9)		Sphagnum m	oss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No Depth (inche	s):		
Water Table Present? Yes No Depth (inche			
Saturation Present? Yes No Depth (inche	s): Wetland	d Hydrology Presen	t? Yes No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if a	vailable:	3
Remarks:			

Sampling	Doint:	WD	P-	C	u
2500 PER DITTO	Point	**		•	v

001	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30'  1 Liriodendron tulipifera		Species?		Number of Dominant Species
	80		FACU	That Are OBL, FACW, or FAC: (A)
2. Acer rubrum	40		FAC_	Total Number of Dominant
3. Quercus palustris  A Chionanthus virginicus	20	<u>N</u>	FACW	Species Across All Strata: 5 (B)
T	10	<u>N</u>	<u>FACU</u>	Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 60 (A/B)
6				Prevalence Index worksheet:
		= Total Cov		
50% of total cover: 75	20% of	total cover	30	
Sapling Stratum (Plot size: 15' )				
1				100
2				
3				
4				UPL species 0 x 5 = 0
5				Column Totals: <u>350</u> (A) <u>1080</u> (B)
6.				Prevalence Index = B/A = 3.0
		= Total Cov	rer	Hydrophytic Vegetation Indicators:
50% of total cover:				I <del></del>
Shrub Stratum (Plot size: 15' )		10101 00701		1 - Rapid Test for Hydrophytic Vegetation
1. Clethra alnifolia	70	Υ	<b>FACW</b>	2 - Dominance Test is >50%
2. Vaccinium angustifolium	10	$\overline{N}$	FACU	3 - Prevalence Index is ≤3.01
•				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
		= Total Cov		Tree - Woody plants, excluding woody vines,
50% of total cover: 40	20% of	total cover	16	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5')			<b>540</b> 11	(7.6 cm) or larger in diameter at breast height (DBH).
1.Lycopodium dendroideum	70	<u>Y</u>	<u>FACU</u>	Sapling - Woody plants, excluding woody vines,
2 Clethra alnifolia	50	<u>Y</u>	<u>FACW</u>	approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6.				Herb - All herbaceous (non-woody) plants, including
7.				herbaceous vines, regardless of size, and woody
8.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9.				S t (1 m) in neight.
10				Woody vine - All woody vines, regardless of height.
·				
11	120	= Total Cov	· · ·	
50% of total cover: 60		total cover		
Woody Vine Stratum (Plot size: 30'	20 % 01	total cover		
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov		Vegetation Present? Yes No
50% of total cover:	20% of	total cover		Liesenti ies A MO
Remarks: (If observed, list morphological adaptations belo	W).			•

Sampling Point; WDP-C U

SOIL

Profile Des	cription: (Describe	to the depth	needed to docur	nent the ir	ndicator	or confirm	the absence	of indicators.)
Depth (last)	Matrix			x Features		1 2 2 2	Tandona	Domonto
(inches)	Color (moist)	_ <del>%</del> _	Color (moist)	<u>%</u>	Type'	Loc <sup>2</sup>	<u>Texture</u> Sand	Remarks
0-20	10YR 4/4						Sano	
15 0.0	to-tles D. Des	Inthe DM D					21 41	Di Basa Halasa M Matrix
	oncentration, D=Dep Indicators: (Applic					ains.		PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histosol		able to all Li	Polyvalue Be		-	DD C T II		fuck (A9) (LRR O)
_	pipedon (A2)		Thin Dark Su				. —	fuck (A10) (LRR S)
	istic (A3)		Loamy Muck				I f	ed Vertic (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye			·	1 1	ont Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma				_	lous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P		Redox Dark	4	,		, , ,	RA 153B)
	icky Mineral (A7) <b>(Li</b> resence (A8) <b>(LRR U</b>		Depleted Day Redox Depre		· ·		1 1	arent Material (TF2) hallow Dark Surface (TF12)
17 1	ick (A9) (LRR P, T)	''	Marl (F10) (L		,,			Explain in Remarks)
	d Below Dark Surfac	e (A11)	Depleted Ocl		MLRA 1	51)		,,
I <del></del> -	ark Surface (A12)		Iron-Mangan					ators of hydrophytic vegetation and
	rairie Redox (A16) (I	-	Umbric Surfa			, U)		land hydrology must be present,
	flucky Mineral (S1) (I Gleyed Matrix (S4)	LRR O, S)	Delta Ochric Reduced Ver		-	OA 150B)		ess disturbed or problematic.
_	Redox (S5)		Piedmont Flo					
1 -	Matrix (S6)		_	-	, ,		A 149A, 153C,	, 153D)
	rface (S7) (LRR P, \$							
	Layer (if observed):							
Туре: <u>N</u>			_					
Depth (in	ches):		_				Hydric Soil	Present? Yes No
Remarks:								

Project/Site: Glassboro-Camden Line	City/County: Gloucester Sampling Date: 8/29/2013
Applicant/Owner: DRPA/NJT	State: NJ Sampling Point: WWN-C W
Investigator(s): DD, MF	_ Section, Township, Range: Wenonah Borough
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): concave Slope (%): 0-2
	47'49.64"N Long: <u>75° 9'4.67"W</u> Datum: <u>NAD 19</u> {
Soil Map Unit Name: Freehold loamy sand, 5-10% slopes,	Freehold sandy loam, 25- NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of y	year? Yes ✓ No (If no, explain in Remarks.)
	y disturbed? Are "Normal Circumstances" present? Yes V No
	roblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showin	g sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes ✓ No	1
Hydric Soil Present? Yes ✓ No	Is the Sampled Area
Wetland Hydrology Present? Yes No	within a Wetland? Yes No
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
Surface Water (A1)  Aquatic Fauna (B	
High Water Table (A2)  Marl Deposits (B1	
Saturation (A3) Hydrogen Sulfide	
Water Marks (B1) Oxidized Rhizosp	heres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)	<u> </u>
	ction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)  Thin Muck Surface	
Iron Deposits (B5) Other (Explain in Inundation Visible on Aerial Imagery (B7)	Remarks) Shallow Aquitard (D3)  FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	pp.mag.num mose (50) (21 nt 1) C)
Surface Water Present? Yes No Depth (inche	s): surface
Water Table Present? Yes No Pepth (inches	
	s): surface Wetland Hydrology Present? Yes V No No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos previous inspections) if available:
Describe Necorded Data (Stream gauge, monitoring well, denar prior	tos, previous inspections), il available.
Remarks:	
Headwater of pond	

20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Acer rubrum	85	<u>Y</u>	FAC_	That Are OBL, FACW, or FAC: 5 (A)
2				
				Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6.				(***)
	05	= Total Co		Prevalence Index worksheet:
40.5				Total % Cover of: Multiply by:
50% of total cover: 42.5	20% of	total cover	<u> </u>	
Sapling Stratum (Plot size: 15'				OBL species x 1 =
1				FACW species
				FAC species 180 x 3 = 540
2				FACU species x 4 =
3				
4				UPL species x 5 =
5.				Column Totals: <u>250</u> (A) <u>680</u> (B)
J				
6				Prevalence Index = B/A = 2.7
	<b></b>	= Total Cov	/er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover		I <del></del>
Shrub Stratum (Plot size: 15' )		10101 00101		1 - Rapid Test for Hydrophytic Vegetation
Olathura aluifalia	30	Υ	FACW	2 - Dominance Test is >50%
1, Clethra alnifolia				3 - Prevalence Index is ≤3.01
2. Viburnum dentatum	20	<u>Y</u>	FAC	Problematic Hydrophytic Vegetation¹ (Explain)
3. Ilex verticillata	10	N	FACW	Troblemate Hydrophytic Vegetation (Explain)
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
		= Total Co	/er	
20				Tree – Woody plants, excluding woody vines,
50% of total cover: 30	20% of	total cover	12	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5' )				(7.6 cm) or larger in diameter at breast height (DBH).
1.Microstegium vimineum	70	Υ	FAC	Sapling - Woody plants, excluding woody vines,
2 Persicaria pennsylvanicum	30	$\overline{Y}$	FACW	approximately 20 ft (6 m) or more in height and less
		<del></del>	171011	than 3 in. (7.6 cm) DBH.
3				
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
e .				Harb. All harbassassa (non superio) planta including
0,				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				` ' "
				Woody vine - All woody vines, regardless of height.
10			$\overline{}$	
11				
	100	= Total Cov	/er	
50% of total cover: <u>50</u>	20% of	total cover	- 20	
		total cover	-	
Woody Vine Stratum (Plot size: 30'				
1				
2				
3,				
4				
5				Hydrophytic
	0	= Total Co	/er	Vegetation
6004 of total agrees				Present? Yes ✔ No
50% of total cover:		total cover		
Remarks: (If observed, list morphological adaptations belo	W).			

Sampling Point: WWN-C W

SOIL

Profile Desc	ription: (Describe	to the dept	h needed to docun	nent the	indicator	or confirm	n the absence of i	ndicators.)
Depth	Matrix			K Feature				
(inches)	Color (moist)	- <u>%</u> .	Color (moist) 10YR 3/1	<u>%</u>	Type <sup>1</sup>	_Loc2	Texture	Remarks
0-4	10YR 4/2	- <del>80</del> -		20	. <u>MS</u>	<u>M</u>	<u>s</u>	
4-16	10YR 4/2	_ <u>70</u>	10YR 5/6	30	<u> </u>	<u>PL</u>	<u>s</u>	
<u>16-20</u>	10YR 4/6	90	10YR 4/2	10	_ <u>MS</u>	<u>M</u>	<u>s</u>	
								_
1T. may 0-0		oletion DN	Dadward Matrix MC			a la a	21 continue Dis	- David Jalana MMatrix
			Reduced Matrix, MS LRRs, unless other			ains.		=Pore Lining, M=Matrix.  Problematic Hydric Soils <sup>3</sup> :
Histosol		able to all	Polyvalue Be		-	PPSTI		(A9) (LRR O)
_	pipedon (A2)		Thin Dark Su				_	(A10) (LRR S)
	stic (A3)		Loamy Mucky				I F	Vertic (F18) (outside MLRA 150A,B)
Hydroge	n Sulfide (A4)		Loamy Gleye	d Matrix	(F2)		Piedmont	Floodplain Soils (F19) (LRR P, S, T)
	I Layers (A5)		✓ Depleted Mat	, r			_	s Bright Loamy Soils (F20)
11 1 -	Bodies (A6) (LRR F		Redox Dark S				(MLRA 1	· ·
	icky Mineral (A7) (L esence (A8) (LRR (		Depleted Dan Redox Depre				1 1	nt Material (TF2) ow Dark Surface (TF12)
	ck (A9) (LRR P, T)	,,	Marl (F10) (L		0)			plain in Remarks)
	d Below Dark Surfac	e (A11)	Depleted Och	,	(MLRA 1	51)		,
	ark Surface (A12)		Iron-Mangane					rs of hydrophytic vegetation and
	rairie Redox (A16) (					', U)		d hydrology must be present,
	lucky Mineral (S1) ( ileyed Matrix (S4)	LRR O, S)	Delta Ochric ( Reduced Ver		_	OA 150B		disturbed or problematic.
	edox (S5)		Piedmont Flo		•			
19 1 "	Matrix (S6)		_	-			RA 149A, 153C, 15	3D)
Dark Su	rface (S7) (LRR P,	S, T, U)		_				•
Restrictive	Layer (if observed)	:						
Type: No			_					
Depth (in:							Hydric Soil Pre	esent? Yes No
Remarks: N	lucky Layer							
	, ,							

Project/Site: Glassboro-Camden Line	City/County: Gloucester	Sampling Date: 8/29/2013
Applicant/Owner: DRPA/NJT	State: NJ	Sampling Point: WWN-C U
Investigator(s): DD, MF	Section, Township, Range: Wenonah Borou	ıgh
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): None	Slope (%): 0-2
	47'49.64"N Long: _75° 9'4.67"W	Datum: NAD 198
Soil Map Unit Name: Freehold loamy sand, 5-10% slopes,		ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of y	vear? Yes ✓ No (If no, explain in Ro	emarks.)
	y disturbed? Are "Normal Circumstances" p	eresent? Yes 🗸 No
	roblematic? (If needed, explain any answer	
SUMMARY OF FINDINGS – Attach site map showin		•
	1	20 20 20
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	Is the Sampled Area	¬
Wetland Hydrology Present?	within a Wetland? Yes	No ✓
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	) Surface Soil	Cracks (B6)
Surface Water (A1) Aquatic Fauna (B	13) Sparsely Veg	getated Concave Surface (B8)
High Water Table (A2)  Marl Deposits (B1		
Saturation (A3) Hydrogen Sulfide	<u>=</u>	1 1
<u></u>	- 10 M	Water Table (C2)
Sediment Deposits (B2)  Presence of Redu  Drift Deposits (B3)  Recent Iron Redu		sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)  Thin Muck Surface	· · · <u>—</u>	Position (D2)
Iron Deposits (B5) Other (Explain in		` '
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral	` '
Water-Stained Leaves (B9)	Sphagnum m	noss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes No Depth (inches		
Water Table Present? Yes No Depth (inche		
Saturation Present? Yes No Depth (inche (includes capillary fringe)	s): Wetland Hydrology Presen	t? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if available:	*
Remarks:		

001		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species
1. Acer rubrum	100	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 4 (A)
2. Quercus alba		<u>Y</u>		Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 66% (A/B)
6				
	<u>150</u>	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 75	20% of	total cover:	30	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)				OBL species 0 x 1 = 0
1. Clethra alnifolia	100	Υ	FACW	FACW species 2 x 2 = 4
2 Viburnum dentatum	30	$\overline{Y}$	FAC	FAC species 2 x 3 = 6
3.				FACU species 1 x 4 = 4
				UPL species 0 x 5 = 0
4				Column Totals: <u>5</u> (A) <u>14</u> (B)
5				
6				Prevalence Index = B/A = 2.8
65		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover: <u>65</u>	20% of	total cover:	20	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15'				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5.				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
	_	= Total Cov	er	
50% of total cover:				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'		10101 00701		(7.6 cm) or larger in diameter at breast height (DBH).
1 Hedera helix	18	Υ	NI	
2 Clethra alnifolia		Y	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
3				<b>.</b>
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				
6				Herb - All herbaceous (non-woody) plants, including
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				Manda de Allera de inservada a efficiela
10				Woody vine - All woody vines, regardless of height.
11.				
	28	= Total Cov	er	
50% of total cover: 14				
Woody Vine Stratum (Plot size: 30'		10101 00101		
1				
2.				
3,				
4				
5				Hydrophytic
		= Total Cov		Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No
Remarks: (If observed, list morphological adaptations belo	w).			'

SOIL

Sampling Point; WWN-C II

Profile Des	cription: (Describe	to the depth	needed to docum	nent the indicato	r or confirm	n the absence of indic	ators.)
Depth	Matrix			x Features			
(inches)	Color (moist)	%	Color (moist)	% Type	Loc <sup>2</sup>	Texture	Remarks
0-2	Leaf Layer						
2-6	10YR 4/3	100				SIS	
6-18	10YR 5/3	100				SIS	_
¹Type: C=C	oncentration, D=Dep	eletion, RM=R	educed Matrix, MS	S=Masked Sand 0	Grains.	<sup>2</sup> Location: PL=Po	re Lining, M=Matrix.
	Indicators: (Applic				J-10.101		blematic Hydric Soils <sup>3</sup> :
Histoso				low Surface (S8)	(LRR S. T. U		-
_	pipedon (A2)			rface (S9) (LRR		2 cm Muck (A	
	istic (A3)			y Mineral (F1) (Lf			c (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye	d Matrix (F2)		Piedmont Floo	dplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Mai	,		_	ight Loamy Soils (F20)
1 -	Bodies (A6) (LRR F		Redox Dark			(MLRA 153E	·
	ucky Mineral (A7) (L		1 1 -	k Surface (F7)		Red Parent Ma	
17 1	resence (A8) (LRR U	J)	Redox Depre				Dark Surface (TF12)
	uck (A9) <b>(LRR P, T)</b> d Below Dark Surfac	o (811)	Marl (F10) (L	hric (F11) (MLRA	4641	Other (Explain	in Remarks)
	ark Surface (A12)	e (ATT)	I F -	ese Masses (F12		T) <sup>3</sup> Indicators of	hydrophytic vegetation and
	rairie Redox (A16) (	MLRA 150A)		ce (F13) (LRR P,			drology must be present,
	Mucky Mineral (S1) (	-		(F17) (MLRA 151		•	urbed or problematic.
	Gleyed Matrix (S4)		1 1	tic (F18) (MLRA	-		
	Redox (S5)		Piedmont Flo	odplain Soils (F1	9) (MLRA 14	49A)	
	Matrix (S6)		Anomalous E	Bright Loamy Soils	(F20) (MLR	RA 149A, 153C, 153D)	
	ırface (S7) (LRR P,						
Restrictive	Layer (if observed)	:					
<sub>Туре:</sub> <u>N</u>	one		_				
Depth (in	ches):		_			Hydric Soil Presen	t? Yes No
Remarks:						•	

Project/Site: Glassboro-Camden Line	City/County: Gloucester	Sampling Date: 8/27/2013
Applicant/Owner: DRPA/NJT	State: NJ	Sampling Point: WMT-G W
Investigator(s): MF, DD, LR	Section, Township, Range: Mantua Towns	hip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): Concav	/e Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 149A	Lat: 39°46'52.74"N Long: 75° 8'59.19"W	
Soil Map Unit Name: Manahawkin muck	5-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	cation: PFO1/EM1C
Are climatic / hydrologic conditions on the site typical		
1994		10
	significantly disturbed?Are "Normal Circumstances"	7) a di
Are Vegetation, Soil, or Hydrology	naturally problematic? (If needed, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site	map showing sampling point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes ✓ Hydric Soil Present? Yes ✓	No Sampled Area  No Within a Wetland? Yes ✓	✓ No □
Wetland Hydrology Present? Yes	No No	
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is required; che	eck all that apply) Surface Soi	l Cracks (B6)
Surface Water (A1)	quatic Fauna (B13) Sparsely Ve	egetated Concave Surface (B8)
✓ High Water Table (A2)	larl Deposits (B15) (LRR U)	atterns (B10)
Saturation (A3)	ydrogen Sulfide Odor (C1) Moss Trim I	ines (B16)
Water Marks (B1)	xidized Rhizospheres along Living Roots (C3)Dry-Season	Water Table (C2)
Sediment Deposits (B2)	resence of Reduced Iron (C4) Crayfish Bu	rrows (C8)
Drift Deposits (B3)	ecent Iron Reduction in Tilled Soils (C6) Saturation	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	hin Muck Surface (C7) Geomorphic	Position (D2)
Iron Deposits (B5)	other (Explain in Remarks) Shallow Aq	uitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutra	l Test (D5)
Water-Stained Leaves (B9)	Sphagnum	moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes No	Depth (inches): Surface	
Water Table Present? Yes No	Depth (inches): -3	
Saturation Present? Yes   ✓ No   (includes capillary fringe)	Depth (inches): 3 Wetland Hydrology Prese	nt? Yes V No No
	well, aerial photos, previous inspections), if available:	
Remarks:		

201	Absolute Domin		Dominance Test worksheet:
Tree Stratum (Plot size: 30'	<u> % Cover Speci</u>		Number of Dominant Species
1. Acer rubrum	<u> 100 Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC: 4 (A)
2			1
			Total Number of Dominant
3			Species Across All Strata: 4 (B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: 100 (A/B)
6			
	100 = ⊤otal	Cover	Prevalence Index worksheet:
50% of total cover: 50			Total % Cover of: Multiply by:
	20 % 01 total 00		OBL species 0 x 1 = 0
Sapling Stratum (Plot size:)	30 Y	FACW	FACW species $30$ $x_2 = 60$
1. Fraxinus pennsylvanica	_ 50	<u> </u>	FAC species 170 x 3 = 510
2			
3			FACU species $\frac{0}{0}$ $x = \frac{0}{0}$
4.			UPL species $0 \times 5 = 0$
5.			Column Totals: <u>200</u> (A) <u>570</u> (B)
6	30 = Total	Cover	Prevalence Index = B/A = 2.8
### 1F		_	Hydrophytic Vegetation Indicators:
50% of total cover: <u>15</u>	20% of total co	over: U	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	00	E 4 0	✓ 2 - Dominance Test is >50%
1. Viburnum dentatum	<u>60</u> Y	<u>FAC</u>	3 - Prevalence Index is ≤3.01
2			Problematic Hydrophytic Vegetation¹ (Explain)
3.			Problematic Hydrophytic Vegetation (Explain)
4			¹Indicators of hydric soil and wetland hydrology must
5			be present, unless disturbed or problematic.
6			Definitions of Five Vegetation Strata:
	_60= ⊤otal	Cover	To a Maria de la casa
50% of total cover: <u>30</u>	20% of total co	<sub>wer:</sub> 12	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5' )			(7.6 cm) or larger in diameter at breast height (DBH).
	10 Y	FAC	
			Sapling – Woody plants, excluding woody vines,
2,			approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3			than a m. (7.6 cm) BBH.
4			Shrub – Woody plants, excluding woody vines,
5,			approximately 3 to 20 ft (1 to 6 m) in height.
6.			Hash All bashs are us (non-use of A plants, including
			Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody
7			plants, except woody vines, less than approximately
8			3 ft (1 m) in height.
9			
10.			Woody vine - All woody vines, regardless of height.
11.			
11.	10 = Total		
E			
50% of total cover: 5	20% of total co	ver: <u>2</u>	
Woody Vine Stratum (Plot size: 30')			
1,			
2.			
3			
4			
5			Hydrophytic
	= ⊤otal	Cover	Vegetation
50% of total cover:	20% of total co	over: _	Present? Yes No
Remarks: (If observed, list morphological adaptations be	Leaf covere	d ground	

Sampling Point: WMT-G W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth Matrix		Redox Features			. 2					
(inches)	Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-20	10 YR 2/1	<u>97                                    </u>	10 YR 3/4	. 3	. <u>C</u>	<u>PL</u>	<u>SI</u>			
l ——										
l ———										
¹Tyne: C=C	oncentration, D=Dep	- ——— - detion RM=6	Reduced Matrix Ma	- S=Masker	d Sand Gr	ains	<sup>2</sup> Location: PL	.=Pore Lining, M=Matrix.		
	Indicators: (Applic					u		Problematic Hydric Solls <sup>3</sup> :		
Histosol			Polyvalue Be		-	.RR S. T. (		k (A9) (LRR O)		
	oipedon (A2)		Thin Dark Su					k (A10) (LRR S)		
	stic (A3)		Loamy Muck				I F	Vertic (F18) (outside MLRA 150A,B)		
Hydroge	n Sulfide (A4)		Loamy Gleyed Matrix (F2)				Piedmont Floodplain Soils (F19) (LRR P, S, T)			
I — T	d Layers (A5)		Depleted Matrix (F3)				Anomalous Bright Loamy Soils (F20)			
17 7 7	Bodies (A6) (LRR F		Redox Dark	•	,		(MLRA	*		
	icky Mineral (A7) (L		Depleted Dai				1 1	nt Material (TF2)		
	esence (A8) (LRR U		Redox Depre	,	8)			low Dark Surface (TF12) plain in Remarks)		
	ick (A9) (LRR P, T) d Below Dark Surfac		Mari (F10) (L Depleted Oc	-	MI PA 1	511	Other (Ex	piair iii Remarks)		
	ark Surface (A12)	æ (∧11)	Iron-Mangan			•	. T) <sup>3</sup> Indicate	ors of hydrophytic vegetation and		
	rairie Redox (A16) (	MLRA 150A)	_		` '			d hydrology must be present,		
	Mucky Mineral (S1) (		Delta Ochric			•		disturbed or problematic.		
I I T	Sleyed Matrix (S4)		Reduced Ver	tic (F18) (	(MLRA 1	0A, 150B)	)			
Sandy F	Redox (S5)		Piedmont Flo	<b>x</b> dplain S	Soils (F19)	(MLRA 1	49A)			
	Matrix (S6)		Anomalous E	Bright Loar	my Soils (	F20) (MLF	RA 149A, 153C, 1	53D)		
	rface (S7) (LRR P,									
Type: N	Layer (if observed) 'A	:								
							1			
	ches): N/A						Hydric Soil Pro	esent? Yes  No No		
Remarks: N	lucky soil									

Project/Site: Glassboro-Camden Line	City/County: Gloucester	S	ampling Date: <u>8/27/2013</u>
Applicant/Owner: 8/27/2013	s	state: NJ s	ampling Point: WWN-B W
Investigator(s): MF, DD, LR	Section, Township, Range: W	enonah Boroug	h
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, r	none): Concave	Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 149A	Lat: _39°47'4.14"N Long: _7	5° 9'1.79"W	Datum: NAD 198
Soil Map Unit Name: Manahawkin muck, 0 to 2	percent slopes	NWI classification	on: PFO1/EM1C
Are climatic / hydrologic conditions on the site typical for		— If no, explain in Rem	
Are Vegetation Soil or Hydrology		Circumstances" pres	W
Are Vegetation Soil or Hydrology		xplain any answers i	25 July 34 Sec. 1
SUMMARY OF FINDINGS – Attach site ma	NAME OF THE PARTY	N S	
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes  Yes  Yes  Yes	No Is the Sampled Area within a Wetland?	Yes	No
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicator	s (minimum of two required)
Primary Indicators (minimum of one is required; check		Surface Soil Cra	SOCIAL LATE SETTI
	atic Fauna (B13)		ated Concave Surface (B8)
	Deposits (B15) (LRR U)	Drainage Patter  Moss Trim Line	
	ogen Sulfide Odor (C1) ized Rhizospheres along Living Roots (C3)	Dry-Season Wa	
	ence of Reduced Iron (C4)	Crayfish Burrow	The state of the s
	ent Iron Reduction in Tilled Soils (C6)		le on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin	Muck Surface (C7)	Geomorphic Po	sition (D2)
Iron Deposits (B5)	r (Explain in Remarks)	Shallow Aquitar	rd (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Te	est (D5)
Water-Stained Leaves (B9)		Sphagnum mos	ss (D8) (LRR T, U)
Field Observations:			
	Depth (inches):		
	Depth (inches):	ydrology Present?	Yes V No
(includes capillary fringe)			res No
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspections), if avai	lable:	
Remarks:			

20'		Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 30'  Acer rubrum	<u>% Cover</u> 50	<u>Species?</u> Y	Status FAC	Number of Dominant Species That Are OBL EACH or EAC: 3	
				That Are OBL, FACW, or FAC:	J
2. Fraxinus pennsylvanica	50		FACW	Total Number of Dominant	
3. Quercus rubra	<u>30</u>	<u> N</u>	<u>FACU</u>	Species Across All Strata: 4 (B)	)
4	_			Percent of Dominant Species	
5		-		That Are OBL, FACW, or FAC: 75 (AV	/B)
6				Prevalence Index worksheet:	
		= Total Co		Total % Cover of: Multiply by:	
50% of total cover:	20% o	f total cove	Г	OBL species $0$ $x 1 = 0$	
Sapling Stratum (Plot size: 15')	80	Υ	FACW	FACW species 130 x 2 = 260	
Fraxinus pennsylvanica     Viburnum dentatum		. —		FAC species 70 x 3 = 210	
2. Viburnum dentatum	20	<u> N</u>	FAC_	FACU species 45 x 4 = 180	
3		-		UPL species $0$ $x = 0$	
4				Column Totals: 245 (A) 650 (E	۵۱ I
5	_			Column Totals: 210 (A) 300	2)
6				Prevalence Index = B/A = 2.6	
	100 = Total Cover			Hydrophytic Vegetation Indicators:	
50% of total cover:	20% o	f total cove	r:	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 Vegetation¹ (Explain)	
3				Topicinals Hydrophylis Vogetalian (Explain)	
4.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must	,
5				be present, unless disturbed or problematic.	
6.				Definitions of Five Vegetation Strata:	
<u> </u>		= Total Co	wer.	_	
50% of total cover:				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.	
Herb Stratum (Plot size:)	20% 0	ii totai cove	·· ——	(7.6 cm) or larger in diameter at breast height (DBH).	
1				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
2				than 3 in. (7.6 cm) DBH.	
3					
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
5				approximately a to 20 it (1 to 6 in) in noight.	
6				Herb - All herbaceous (non-woody) plants, including	1
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately	
8	_			3 ft (1 m) in height.	
9				Woody vine - All woody vines, regardless of height.	
10				values of neight.	
11					
		= Total Co	ver		
50% of total cover:	20% o	f total cove	r:		
Woody Vine Stratum (Plot size: 15')					
1, Parthenocissus quinquefolia	15	Υ	FACU		
2.					
3					
4		-			
5	4.5			Hydrophytic	
5004 51 1 1		= Total Co		Vegetation Present? Yes No	
50% of total cover:			r: <u> </u>		
Remarks: (If observed, list morphological adaptations bel	<sup>low).</sup> Bare	Ground			

SOIL Sampling Point: WWN-B W

	cription: (Describe	to the depth				or confirm	n the absence	of indicate	ors.)
Depth (inches)	Matrix Color (moist)	<del></del> -	Redo Color (moist)	<u>x Feature</u> %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-20	10 YR 3/1	- <del>70</del> -	7.5 YR 3/4	30	C	M	SL	Moist	Homans
0 20	10 111 0/1				<del>-</del>	101	<u> </u>	WOISE	
									_
1Time: C-C	oncentration, D=Dep		Poducod Motriy M	- ———— S-Maskad			2l continu	DIDoro I	ining, M=Matrix.
	indicators: (Applic					ашъ.			matic Hydric Solis <sup>3</sup> :
Histoso			Polyvalue Be		-	.RR S. T. (		Muck (A9) (L	
_	pipedon (A2)		Thin Dark Su					Muck (A10)	
	istic (A3)		Loamy Muck				I F		18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye		F2)				ain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma					-	Loamy Soils (F20)
11 7	Bodies (A6) (LRR F		Redox Dark Depleted Da		,			RA 153B)	iol (TEO)
	icky Mineral (A7) <b>(Li</b> resence (A8) (L <b>RR L</b>		Redox Depre		, , ,		1 1	arent Mater Shallow Dark	k Surface (TF12)
	uck (A9) (LRR P, T)	•,	Mari (F10) (L	,	·,			(Explain in I	
111	d Below Dark Surfac	e (A11)	Depleted Oc	-	(MLRA 1	51)		(	,
Thick D	ark Surface (A12)		iron-Mangan	ese Mass	es (F12) (	LRR O, P,	, T)	cators of hyd	drophytic vegetation and
	rairie Redox (A16) (I					, U)			ogy must be present,
1	Aucky Mineral (S1) (i	LRR O, S)	Delta Ochric			OR 4505		ess disturbe	ed or problematic.
_	Sleyed Matrix (S4) Redox (S5)		Reduced Ver						
19 1 -	Matrix (S6)			-		-	RA 149A, 153C	:. 153D)	
	rface (S7) (LRR P,	S, T, U)	_	•		, ,	•	,	
	Layer (if observed)	:							
Туре: <u>N</u>									
Depth (in	<sub>ches):</sub> N/A						Hydric Soil	Present?	Yes No No
Remarks:									

Project/Site: Glassboro-Camden Line	City/County: Glou	cester	Sampling Date: 8/27/2013
Applicant/Owner: 8/27/2013		State: NJ	Sampling Point: WWN-B U
Investigator(s): MF, DD, LR	Section, Township,	Range: Wenonah Borou	ıgh
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concav	re, convex, none): none	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	Lat: _39°47'4.14"N	Long: <u>75° 9'1.79"W</u>	Datum: NAD 198
Soil Map Unit Name: Manahawkin muck, 0	to 2 percent slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typ	ical for this time of year? Yes N	lo (If no, explain in R	emarks.)
Are Vegetation Soil or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	resent? Yes 🗸 No
Are Vegetation Soil or Hydrology	naturally problematic? (I	If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach si	te map showing sampling poir	nt locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes	No V	e x x	3.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	No / Is the Samp	AND THE RESIDENCE OF THE PARTY	¬
Wetland Hydrology Present?	No within a We	etland? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required;	check all that apply)	Surface Soil	Cracks (B6)
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2)	Marl Deposits (B15) (LRR U)	Drainage Pat	3 00
Saturation (A3)	Hydrogen Sulfide Odor (C1)	Moss Trim Li	nes (B16)
Water Marks (B1)	Oxidized Rhizospheres along Living Ro	oots (C3) Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burr	ows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (C	C6) Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	
Water-Stained Leaves (B9) Field Observations:		Sphagnum m	ioss (D8) (LRR T, U)
U.S. D.	Donth (inches):		
	Depth (inches):		
	Depth (inches):	Wetland Hydrology Presen	t? Yes No ✓
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	wetland Hydrology Presen	tr res No
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspecti	ions), if available:	3
Remarks:			

Sampling		<b>\</b> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	۱۸	/N	J.	R	Т	١
Sampling	Point:	vv	v	V I	и-	ט	·	,

201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Fraxinus americana	80	. <u>Y</u>	<u>FACW</u>	That Are OBL, FACW, or FAC: 2 (A)
2. Accer rubrum	50	Υ	FAC	T. (1) ( 5 )
3.				Total Number of Dominant Species Across All Strata:  5 (B)
				Species Across Air Strata (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 40 (A/B)
6				
		= Total Cov	er er	Prevalence Index worksheet:
50% of total cover: 65				Total % Cover of: Multiply by:
15'	2070 0	i total cover	. ——	OBL species $0 x 1 = 0$
Sapling Stratum (Plot size: 15' )				FACW species 80 x 2 = 160
1				FO 150
2				
3.				FACU species 30 x 4 = 120
4.				UPL species <u>80</u> x 5 = <u>400</u>
				Column Totals: <u>240</u> (A) <u>830</u> (B)
5				(,
6		<del></del>		Prevalence Index = B/A = 3.45
		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover:	20% c	of total cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0¹
2.				
				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	0	= Total Cov		
500/ - 51-d-1		-		Tree – Woody plants, excluding woody vines,
50% of total cover:	20% c	of total cover	:	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5')				(7.6 cm) or larger in diameter at breast height (DBH).
<sub>1.</sub> Hedera helix	80	. <u>Y</u>	<u>UPL</u>	Sapling – Woody plants, excluding woody vines,
<sub>2.</sub> Quercus alba	20	Υ	FACU	approximately 20 ft (6 m) or more in height and less
•				than 3 in. (7.6 cm) DBH.
3				Observe 186 and a serve serve discovered to discovere
4		· ———		Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximately 5 to 20 it (1 to 5 iii) iii neight.
6				Herb – All herbaceous (non-woody) plants, including
7.				herbaceous vines, regardless of size, <u>and</u> woody
				plants, except woody vines, less than approximately
8		·		3 ft (1 m) in height.
9		· ——		Woody vine – All woody vines, regardless of height.
10		. ——		
11				
	100	= Total Cov	er	
50% of total cover: 50	20% 6	of total cover		
	20% 0	i total cover		
Woody Vine Stratum (Plot size: 30'	4.0	V	- A O	
Parthenocissus quinquefolia	10	. <u>Y</u>	<u>FACU</u>	
2				
3.				
4	-	- ——		
5				Hydrophytic
	10	= Total Cov	/er	Vegetation
50% of total cover: <u>5</u>	20% c	of total cover	: 2	Present? YesNo▼
Remarks: (If observed, list morphological adaptations belo				
Transaction (in object tous, institution priority lieuter adaptation is being	'''''Heav	y tree car	юру	

Sampling Point: WWN-B U

Profile Des	cription: (Describe	to the depth	needed to docu	ment the ir	ndicator	or confirm	the absence of ir	ndicators.)
Depth (inches)	Matrix Color (maist)	<u>%</u>	Redo Color (moist)	ox Features		Loc <sup>2</sup>	Texture	Remarks
(inches)	Color (moist)	- <del>- 20</del> - 100	Color (moisi)	_ <u> </u>	Type <sup>1</sup>	LOC		Remarks
0-4	10YR 2/2	_ 100 _					<u> </u>	
								_
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM=R	educed Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=	Pore Lining, M=Matrix.
Hydric Soll	Indicators: (Applic	cable to all Li	RRs, unless othe	rwise note	ed.)		Indicators for I	Problematic Hydric Solis <sup>3</sup> :
Histosol	(A1)		Polyvalue B	elow Surfac	e (S8) (L	RR S, T, U	I)1 cm Muck	(A9) (LRR O)
_	oípedon (A2)		Thin Dark S				I F	(A10) (LRR S)
	istic (A3)		Loamy Muck			O)		ertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gley		=2)			Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)	B T 110	Depleted Ma		e)			Bright Loamy Soils (F20)
_	Bodies (A6) (LRR I Joky Mineral (A7) (L		Redox Dark Depleted Da		*		(MLRA 1	יסאס): : Material (TF2)
	resence (A8) (LRR		Redox Depr				1 1	ow Dark Surface (TF12)
	ick (A9) (LRR P, T)		Marl (F10) (I	,	• •			lain in Remarks)
	d Below Dark Surfac		Depleted Oc	-	MLRA 1	51)		,
	ark Surface (A12)	,	Iron-Mangar				T) <sup>3</sup> Indicators	s of hydrophytic vegetation and
	rairie Redox (A16) (		Umbric Surfa	ace (F13) (I	LRR P, T,	U)	wetland	hydrology must be present,
	Mucky Mineral (S1) (	(LRR O, S)	Delta Ochric					disturbed or problematic.
	Sleyed Matrix (S4)		Reduced Ve					
9 1 -	Redox (S5)		Piedmont FI	-		-	-	
	Matrix (S6)	C T III	Anomalous	Bright Loan	ny Solis (i	-20) (MLR	A 149A, 153C, 153	(D)
	rface (S7) (LRR P, Layer (if observed)							
Type: R	ock	,.						<u></u>
Depth (in			_				Hydric Soil Pres	sent? Yes No
	cnes). <u>·</u>		<del></del>				nyunc Son Pres	sent? res No
Remarks:								
I								

Project/Site: Glassboro-Camden Line	City/County: Glou	ucester	Sampling Date: 8/27/2013
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WMT-F W
Investigator(s): MF, DD, LR	Section, Township	, <sub>Range:</sub> <u>Mantua Townsh</u>	ip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (conca	ve, convex, none): Concave	Slope (%): <u>0-3</u>
Subregion (LRR or MLRA): MLRA 149A	Lat: _39°45'25.16"N	Long: 75° 8'13.60"W	Datum: NAD 19
Soil Map Unit Name: Fluvaquents, loamy, 0-3% sl	opes	NWI classific	ation: PFO1C
Are climatic / hydrologic conditions on the site typical for the	nis time of year? Yes	No (If no, explain in R	emarks.)
Are Vegetation Soil or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	resent? Yes V No
	100	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sampling poi	nt locations, transects	, important features, etc.
Hudranhudia Vanatatian Bassanta Van	N		À
	No Is the Sam		¬ —
RD 20 45 444 447 (144 445 445 445 445 445 445 445 445 445	No within a W	etland? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check al	I that apply)	Surface Soil	Cracks (B6)
Surface Water (A1)	c Fauna (B13)	Sparsely Veg	getated Concave Surface (B8)
High Water Table (A2)  Marl D	eposits (B15) (LRR U)	✓ Drainage Pat	terns (B10)
Saturation (A3)	gen Sulfide Odor (C1)	Moss Trim Li	nes (B16)
Water Marks (B1) Oxidiz	ed Rhizospheres along Living R	Roots (C3) Dry-Season V	Water Table (C2)
	nce of Reduced Iron (C4)	Crayfish Burr	
	t Iron Reduction in Tilled Soils (	1 (i) ———————————————————————————————————	sible on Aerial Imagery (C9)
	luck Surface (C7)		Position (D2)
	(Explain in Remarks)	Shallow Aqui	anana Maraka
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	
Water-Stained Leaves (B9) Field Observations:	1	Spnagnum m	noss (D8) (LRR T, U)
	epth (inches): Surface		
	epth (inches):		
	epth (inches): Surface	Wetland Hydrology Presen	t? Yes 🗸 No
(includes capillary fringe)			ti les <u> </u>
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous inspec	tions), if available:	
Remarks:			
Nonario.			

201		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30'		<u>Species?</u>		Number of Dominant Species
1. Acer rubrum	100	<u> Y                                   </u>	<u>FAC</u>	That Are OBL, FACW, or FAC: 3 (A)
2				
				Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 60 (A/B)
6				(15)
<u> </u>		= Total Co		Prevalence Index worksheet:
FO				Total % Cover of: Multiply by:
50% of total cover: <u>50</u>	20% c	of total cover	: 20	
Sapling Stratum (Plot size: 15' )				OBL species X1 =
4 Liriadandran tulinifara	20	Υ	FACU	FACW species $25$ $x = 50$
	-			FAC species 120 x 3 = 360
2				FACU species 90 x 4 = 360
3	. ——			
4				
5.				Column Totals: <u>240</u> (A) <u>775</u> (B)
6		- Total Ca		Prevalence Index = B/A = 3.2
40		_= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover: 10	20% c	of total cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				✓ 2 - Dominance Test is >50%
1.				1 <del></del>
				3 - Prevalence Index is ≤3.0¹
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
5				
6				Definitions of Five Vegetation Strata:
	0	= Total Cov	/er	Tree – Woody plants, excluding woody vines,
50% of total cover:	20% c	of total cover	:	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
	25	Υ	FACW	
1.Phragmites australis				Sapling – Woody plants, excluding woody vines,
<sub>2.</sub> Urtica dioica	20	<u>Y</u>	<u>FAC</u>	approximately 20 ft (6 m) or more in height and less
3. Juncus effusus	5	N	OBL	than 3 in. (7.6 cm) DBH.
4				Shrub Woody plants, avaluding woody vines
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximatory of to 20 ft (1 to 0 fil) in noight.
6				Herb – All herbaceous (non-woody) plants, including
7.				herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
8	-			3 ft (1 m) in height.
9				Note and the state of the state of the state of
10				Woody vine - All woody vines, regardless of height.
11.	-			
11	50			
0.5		_= Total Cov		
50% of total cover: 25	20% c	of total cover	: <u>10                                    </u>	
Woody Vine Stratum (Plot size: 30')				
1. Parthenocissus quinquefolia	70	Υ	FACU	
	· · ·	- —		
2				
3				
4.				
U	70			Hydrophytic
		_= Total Cov		Vegetation Vegetation
50% of total cover: <u>35</u>	20% d	of total cover	: <u>14</u>	Present? Yes No No
Remarks: (If observed, list morphological adaptations belo				
resmarks. An observed, list morphological adaptations better	-n j.			

Sampling Point: WMT-F W

Profile Des	cription: (Describe	to the depth	needed to docum	ent the	indicator	or confirm	n the absence of in	dicators.)
Depth (inches)	Matrix Color (moist)	<del></del> _	Redox Color (moist)	Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-7	10 YR 2/1		10 YR 3/6	30	MS	. <u></u> М	SCL SCL	Remarks
7-20		- <del></del> -	10 YR 5/1	30	MS MS		SCL —	
<del>                                     </del>	10 YR 4/1	- 70 -		30	IVIS	<u>M</u>	<u> </u>	
<sup>1</sup> Type: C=C	oncentration, D=Dep	eletion, RM=R	Reduced Matrix, MS	=Masked	d Sand Gr	ains.	<sup>2</sup> Location: PL=I	Pore Lining, M=Matrix.
Hydric Soli	indicators: (Applic	able to all L	RRs, unless other	wise not	ed.)		Indicators for P	roblematic Hydric Solis <sup>3</sup> :
Histoso	, ,		Polyvalue Bel				· —	(A9) (LRR O)
_	pipedon (A2)		Thin Dark Sur				I F	(A10) (LRR S)
	istic (A3) en Sulfide (A4)		Loamy Mucky Loamy Gleyed			(0)	1 1	ertic (F18) <b>(outside MLRA 150A,B)</b> loodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Matr		·· =/			Bright Loamy Soils (F20)
1 1 -	Bodies (A6) (LRR F		Redox Dark S				(MLRA 15	3B)
	ucky Mineral (A7) (L		Depleted Dark				1 1	Material (TF2)
17 1	resence (A8) (LRR U uck (A9) (LRR P, T)	1)	Redox Depres Marl (F10) (LF		8)			w Dark Surface (TF12) ain in Remarks)
	d Below Dark Surfac	e (A11)	Depleted Och	-	(MLRA 1	51)	Other (Expir	all ill Reliains)
11 1 1	ark Surface (A12)	, ,	Iron-Mangane				, T) <sup>3</sup> Indicators	of hydrophytic vegetation and
	rairie Redox (A16) (					, U)		hydrology must be present,
	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric ( Reduced Vert			OA 4500		sturbed or problematic.
	Gleyed Matrix (S4) Redox (S5)		Piedmont Floo	, ,	•		•	
11 1 -	1 Matrix (S6)			-		-	RA 149A, 153C, 153	D)
	rface (S7) (LRR P,							
Restrictive	Layer (if observed) /Δ	:						
	ches): N/A		<u></u>				Uhadala Gall Basa	V
	cnes): 14/71		<u> </u>				Hydric Soil Pres	ent? Yes No No
Remarks:								

Project/Site: Glassboro-Camden Line	City/County: Gloucester	Sampling Date: 8/27/2013
Applicant/Owner: DRPA/NJT	State: NJ	Sampling Point: WMT-F2
Investigator(s): MF, DD, LR	Section, Township, Range: Mantua Tov	wnship
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): Cor	
Subregion (LRR or MLRA): MLRA 149A	Lat: 39°45'20.61"N Long: 75° 8'10.5	
Soil Map Unit Name: Fluvaquents, loamy, 0 to	3 percent slopes NWI di	assification: PFO1C
Are climatic / hydrologic conditions on the site typical f		n in Remarks.)
Are Vegetation Soil or Hydrology		ices" present? Yes V No
Are Vegetation Soil or Hydrology	naturally problematic? (If needed, explain any a	a Pa
SUMMARY OF FINDINGS – Attach site h	nap showing sampling point locations, trans	ects, important features, etc.
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area	
Hydric Soil Present? Yes ✓	N/a	✓ No .
Wetland Hydrology Present? Yes	No	
Remarks:	_	
HYDROLOGY		
Wetland Hydrology Indicators:	Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec		e Soil Cracks (B6)
	A CONTROL OF THE CONT	ely Vegetated Concave Surface (B8)
		ge Patterns (B10)
		Frim Lines (B16)
Water Marks (B1)	idized Rhizospheres along Living Roots (C3) Dry-Se	ason Water Table (C2)
		h Burrows (C8)
		tion Visible on Aerial Imagery (C9)
		orphic Position (D2)
Iron Deposits (B5) Ot Inundation Visible on Aerial Imagery (B7)	(AC) (A)	w Aquitard (D3) eutral Test (D5)
Water-Stained Leaves (B9)	manual	num moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes V	Depth (inches): surface	
Water Table Present? Yes ✓ No	Depth (inches): <u>-3</u>	
Saturation Present? Yes Vo No	Depth (inches): Surface Wetland Hydrology P	resent? Yes 🗸 No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring)	well, aerial photos, previous inspections), if available:	
Besonder Nessiaca Bata (stream gauge, mormoring	well, derial photos, previous inspections), il available.	
Remarks:		
Adjacent to ponded area		

001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 3 (A)
2				Total Month on of Bourtains
3.				Total Number of Dominant Species Across All Strata:  (B)
				Openios Autoss Automata.
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
	0	= Total Cov	er	
50% of total cover:	20% o	f total cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15' )				OBL species 20 x 1 = 20
A				FACW species 10 x 2 = 20
1				FAC species 20 x 3 = 60
2				FACU species $0$ $x 4 = 0$
3				
4				· — — — — — — — — — — — — — — — — — — —
5				Column Totals: <u>50</u> (A) <u>100</u> (B)
6.				5
·				Prevalence Index = B/A = 2
		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover:	20% o	f total cover	:	✓ 1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				✓ 2 - Dominance Test is >50%
<sub>1.</sub> Viburnum dentatum	20	<u>Y</u>	FAC	✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. llex verticillata	10	Y	FACW	1 <del></del>
				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	30	= Total Cov	er	
50% of total cover: 15			_	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
· · · · · · · · · · · · · · · · · · ·	20% 0	i total cover	. —	(7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5' )	00	V	OBL	( ) is all your anger an exercise at a reason reagent ( D D ) i.
1.Polygonum hydropiperoides	. 20	<u>Y</u>	OBL	Sapling – Woody plants, excluding woody vines,
2				approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4.				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
5				
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10.				Woody vine - All woody vines, regardless of height.
11	20			
40		= Total Cov		
50% of total cover: <u>10</u>	20% o	f total cover	: <u>4</u>	
Woody Vine Stratum (Plot size: 30'				
1				
2.				
3				
4				
5				Hydrophytic
	0	= Total Cov	er	Vegetation
50% of total cover:				Present? Yes No
			<u> </u>	
Remarks: (If observed, list morphological adaptations belo	⋙).			

Sampling Point: WMT-F2 W

Profile Des	cription: (Describe	to the depth	n needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-16</u>	10 YR 3/1	<u> 100</u> _					SIL	Saturated
16-20	10 YR 3/1	95	10 YR 3/4	5	С	М	SIL	
l <del></del>	-							
¹Tyme: C=C	oncentration, D=De	nletion RM=	Peduced Matrix M	S=Macker	d Sand G	raine	2l ocation:	PL=Pore Lining, M=Matrix.
	Indicators: (Appli					i aii i 3.		for Problematic Hydric Solis <sup>3</sup> :
Histoso			Polyvalue Be			IRRSTI		Muck (A9) (LRR O)
	pipedon (A2)		Thin Dark Si				. —	Muck (A10) (LRR S)
_	istic (A3)		Loamy Muck				I F	ced Vertic (F18) (outside MLRA 150A,B)
11 1	en Sulfide (A4)		Loamy Gley			•	1 1	nont Floodplain Soils (F19) (LRR P, S, T)
Stratifie	d Layers (A5)		Depleted Ma	trix (F3)			Anoma	alous Bright Loamy Soils (F20)
Organic	Bodies (A6) (LRR I	P, T, U)	Redox Dark	Surface (I	<del>-</del> 6)		(MLI	RA 153B)
	ucky Mineral (A7) <b>(L</b>		Depleted Da				1 1	arent Material (TF2)
17 1	resence (A8) (LRR	•	Redox Depri		8)			Shallow Dark Surface (TF12)
	uck (A9) (LRR P, T)		Marl (F10) (I	-			Other	(Explain in Remarks)
11 1 '	d Below Dark Surfa	ce (A11)	Depleted Oc		•		<b>-</b> 1 31:	
	ark Surface (A12) 'rairie Redox (A16) (	MI DA 150A)	Iron-Mangan Umbric Surfa					cators of hydrophytic vegetation and that the standard st
	Mucky Mineral (S1)		Delta Ochric					less disturbed or problematic.
	Gleyed Matrix (S4)	(21111 0, 0,	Reduced Ve					iss distal sed of presidentials.
	Redox (S5)		Piedmont Fl					
19 1 -	Matrix (S6)			-			RA 149A, 153C	C, 153D)
	rface (S7) (LRR P,							
	Layer (if observed	):						
Туре: <u>N</u>								
Depth (in	ches): N/A						Hydric Soil	Present? Yes Y No No
Remarks:							1	

Project/Site: Glassboro-Camden Line	City/County: Glouceste	<u>∍r</u>	Sampling Date: 8/2//2013
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WMT-F U
Investigator(s): MF, DD, LR	Section, Township, Rang	e: Mantua Townsh	ip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, con	ivex, none): None	Slope (%): 0-2
	9°45'25.16"N Lor	<sub>ng:</sub> <u>75° 8'13.60"W</u>	Datum: NAD 19
Soil Map Unit Name: Fluvaquents, loamy, 0-3% slopes	275-12700	NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes V No	(If no, explain in Re	
200.0	78	ormal Circumstances" p	*
		ded, explain any answer	ele nel he
SUMMARY OF FINDINGS – Attach site map show		68	
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes  No  Wetland Hydrology Present?	Is the Sampled A within a Wetland		No <b>✓</b>
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:	W1 700	Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that ap	37030	Surface Soil (	ACCUMULATION AND COLUMN TO SERVICE AND SER
Surface Water (A1) Aquatic Fauna			getated Concave Surface (B8)
High Water Table (A2)  Saturation (A3)  Marl Deposits  Hydrogen Sulf	(B15) (LRR U)	Drainage Pat  Moss Trim Lii	
	ospheres along Living Roots (0	=	Water Table (C2)
	educed Iron (C4)	Crayfish Burr	
Drift Deposits (B3)	eduction in Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Sur			Position (D2)
Iron Deposits (B5) Other (Explain	in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	. 55 Maril 19
Water-Stained Leaves (B9) Field Observations:		Spriagnum m	noss (D8) (LRR T, U)
Surface Water Present? Yes No Depth (inc	ches):		
Water Table Present? Yes No Depth (inc			
Saturation Present? Yes No Depth (includes capillary fringe)	State State and the state of th	and Hydrology Presen	t? Yes No V
Describe Recorded Data (stream gauge, monitoring well, aerial p	photos, previous inspections), i	if available:	
Remarks:			

20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )	_	<u>Species?</u>		Number of Dominant Species That Are OBL FACIAL or FAC: 5
1. Liriodendron tulipifera	50	. <u>Y</u>	<u>FACU</u>	That Are OBL, FACW, or FAC: 5 (A)
2. Liquidambar styraciflua	<u>30</u>	<u>Y</u>	FAC_	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4.				,
				Percent of Dominant Species That Are ORL 500W or 500: 71
5				That Are OBL, FACW, or FAC: / / (A/B)
6				Prevalence Index worksheet:
40		= Total Co		Total % Cover of: Multiply by:
50% of total cover: 40	20% c	of total cover	: 16	
Sapling Stratum (Plot size: 15' )				OBL species $\frac{0}{0}$ $x = \frac{0}{0}$
1. Acer rubrum	30	Υ	FAC	FACW species $0$ $x = 0$
2.				FAC species 125 x 3 = 375
				FACU species <u>65</u> x <b>4</b> = <u>260</u>
3				UPL species $0   x 5 = 0$
4				Column Totals: 190 (A) 635 (B)
5				(5)
6				Prevalence Index = B/A = $3.3$
	30	= Total Cov	/ег	Hydrophytic Vegetation Indicators:
50% of total cover: 15	20% c	of total cover	<u>:</u> <u>6</u>	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				✓ 2 - Dominance Test is >50%
1				·
				3 - Prevalence Index is ≤3.0¹
2.				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4		. ——		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	0	= Total Co	/er	Tree Missely Plants, evaluating woods vines
50% of total cover:	20% c	of total cover	:	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1.Smilax rotundifolia	30	Υ	FAC	One line - 10 (and a standard - made for a superior de la constant
2. Liquidambar styraciflua	15	Y	FAC	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3. Prunus serotina	15	· <del>'</del>	FACU	than 3 in. (7.6 cm) DBH.
		· <del></del>		
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
8.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
•				Sit (1 III) III Height.
9				Woody vine - All woody vines, regardless of height.
10				
11				
	60	= Total Co	/er	
50% of total cover: 30	20% c	of total cover	: <u>12                                    </u>	
Woody Vine Stratum (Plot size: 15')				
1. Lonicera japonica	20	Υ	FAC	
2.				
3				
4	-	· ——		
5				Hydrophytic
10	20	= Total Co		Vegetation Present? Yes No
50% oftotal cover: 10	20% c	of total cover	: <u>4                                    </u>	Liesenti ies NO
Remarks: (If observed, list morphological adaptations belo	owr).			•

Sampling Point: WMT-F U

Depth (inches)   Matrix   Redox Features   Color (moist)   %   Color (moist)   %   Type¹   Loc²   Texture   Remarks	
	—
	-
	—
	_
	_
	_
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol (A1) 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)  Plack Histic (A2)  Replace Histic (A2)  Replace Histic (A2)	. B.
Black Histic (A3) Loamy Mucky Mineral (F1) (LRR 0) Reduced Vertic (F18) (outside MLRA 150A Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S,	
Stratified Layers (A5)  Depleted Matrix (F3)  Anomalous Bright Loamy Soils (F20)	.,
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B)	
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7)	
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12) I cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)	
Depleted Below Dark Surface (A11)  Depleted Ochric (F11) (MLRA 151)	
Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of hydrophytic vegetation and	
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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
Dark Surface (S7) (LRR P, S, T, U)	
Restrictive Layer (if observed):  Type: Refusal	
	7
Remarks:	

Project/Site: Glassboro - Camden Line	City/County: Glou	ucester	Sampling Date: 8/20/2013
Applicant/Owner: DRPA-NJT		State: NJ	Sampling Point: WMT-A W
Investigator(s): DD, MF	Section, Township	, <sub>Range:</sub> <u>Mantua Townsh</u>	nip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concar	ve, convex, none): Concave	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA-149A	_ Lat: _39°44'54.76"N	Long: <u>75° 8'1.15"W</u>	Datum: NAD 198
Soil Map Unit Name: Jade Run fine sandy loam,	0 to 2 percent slopes	NWI classific	ation: PFO1B
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No (If no, explain in R	emarks.)
Are Vegetation Soil or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	present? Yes V No
Are Vegetation Soil , or Hydrology	naturally problematic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing sampling poi	nt locations, transects	, important features, etc.
Hydrophytic Vegetation Present?	No Latte Com	88 30 W	3.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Yes  Yes	No lis the Sam	./	¬
Wetland Hydrology Present?	No within a We	etland? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:	energy to stay	Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check a		Surface Soil	Cracks (B6)
<u> </u>	tic Fauna (B13)		getated Concave Surface (B8)
	Deposits (B15) (LRR U)	Drainage Par	
	ogen Sulfide Odor (C1)	Moss Trim Li	
	zed Rhizospheres along Living R ence of Reduced Iron (C4)	Crayfish Buri	Water Table (C2)
	ent Iron Reduction in Tilled Soils (		sible on Aerial Imagery (C9)
	Muck Surface (C7)		Position (D2)
	r (Explain in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)		Sphagnum n	noss (D8) (LRR T, U)
Field Observations:			
	Depth (inches):		
	Depth (inches):		
Saturation Present? Yes No Vincludes capillary fringe)	Depth (inches):	Wetland Hydrology Presen	t? Yes V No No
Describe Recorded Data (stream gauge, monitoring we	II, aerial photos, previous inspect	tions), if available:	Ö
Remarks: Ephemeral wet area at toe of slope extends	into woods		
Epitemeral wet area at toe of slope extends	into woods		

,	A la14-	D tt	I	Beating and Frankenschaft
The Directions (Black of the 30'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Acer rubrum	70	<u>Y</u>	FAC_	That Are OBL, FACW, or FAC:  (A)
2. Liquidambar styraciflua	50	<u> </u>	FAC	
· · · · · · · · · · · · · · · · · · ·				Total Number of Dominant
3. Fraxinus pennsylvanica	10	<u>N</u>	<u>FACVV</u>	Species Across All Strata:
4.				
-				Percent of Dominant Species That Are OBL EACING SEACH 100
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				
	130	= Total Cov	or	Prevalence Index worksheet:
65				Total % Cover of: Multiply by:
50% of total cover: <u>65</u>	20% of	total cover	<u> 20</u>	
Sapling Stratum (Plot size: 15' )				
A A a a way begins a	20	V	FAC	FACW species 30 x 2 = 60
1. Acer rubrum				
<sub>2.</sub> Liquidambar styraciflua	15	Υ	FAC	
				FACU species $5   x 4 = 20$
3				UPL species $0$ $x = 0$
4				
				Column Totals: <u>215</u> (A) <u>610</u> (B)
5				
6				Prevalence Index = B/A = 2.8
	25	= Total Cov	er	
47.5			_	Hydrophytic Vegetation Indicators:
50% of total cover: <u>17.5</u>	20% of	total cover	:	✓ 1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				1 <del></del>
Hey energy	10	Υ	FAC	2 - Dominance Test is >50%
1. llex opaca	10	<u> </u>	<u> </u>	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				
				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				1 badicators of tradica acid and costoned by declare, maret
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	10	= Total Cov		_
_			_	Tree – Woody plants, excluding woody vines,
50% of total cover: <u>5</u>	20% of	total cover	<u> 2                                   </u>	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
	1 =	Υ	FACW	
1.Onoclea sensibilis	<u>15</u>	<u> </u>	FACVV	Sapling – Woody plants, excluding woody vines,
<sub>2</sub> Bidens frondosa	5	N	<b>FACW</b>	approximately 20 ft (6 m) or more in height and less
3. Parthenocissus quinquefolia	5	N	FACU	than 3 in. (7.6 cm) DBH.
4. Carex stricta	5	N	OBL	Shrub – Woody plants, excluding woody vines,
5. llex opaca	5	$\overline{N}$	FAC	approximately 3 to 20 ft (1 to 6 m) in height.
6. Smilax rotundifolia	5	N	FAC	Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9.				
				Woody vine - All woody vines, regardless of height.
10				
11				
···-	40			
	40	= Total Cov	er	
50% of total cover: 20	20% of	total cover	8	
· · · · · · · · · · · · · · · · · · ·				
Woody Vine Stratum (Plot size: 30' )				
1,				
2				
3				
4				
5				Hydrophytic
	0	= Total Cov	e <b>r</b>	Vegetation   ⊿
0	$\overline{}$	= Total Cov		Vegetation Present? Yes No
50% of total cover: 0	$\overline{}$	= ⊺otal Cov total cover		Vegetation Present? Yes No
	20% of	total cover	0	Present? Yes No
	20% of	total cover	0	Present? Yes No
50% of total cover: 0  Remarks: (If observed, list morphological adaptations belo	20% of	total cover	0	Present? Yes No

Sampling Point: WMT-A W

Profile Desc	cription: (Describe	to the dept	h needed to docur	ment the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)		Color (moist)	<u> </u>	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
<u>0-16</u>	10YR 3/2	<u>95</u> .	10YR 4/6	<u>5</u>	<u> </u>	<u> PL                                   </u>	SICL	
16-20	10YR 6/3	88	10YR 4/1	10	С	<u>M</u>	SICL	
			10YR 4/6	2	С	PL		Sandy - Moist
							· ——	
¹Type: C=C	oncentration, D=De	nletion RM=	Reduced Matrix M	- ——— S=Maske	d Sand G	rains	<sup>2</sup> l ocation:	PL=Pore Lining, M=Matrix.
	Indicators: (Appli					rums.		for Problematic Hydric Solis <sup>3</sup> :
Histosol			Polyvalue Be			LRR S. T.		Muck (A9) (LRR O)
_	pipedon (A2)		Thin Dark Su					Muck (A10) (LRR S)
	istic (A3)		Loamy Muck				I F	ced Vertic (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye			-	Piedm	nont Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma	trix (F3)			Anom	alous Bright Loamy Soils (F20)
	Bodies (A6) (LRR		Redox Dark					RA 153B)
	icky Mineral (A7) <b>(L</b>		Depleted Da				1 1	Parent Material (TF2)
	resence (A8) (LRR		Redox Depre		-8)			Shallow Dark Surface (TF12)
	ick (A9) (LRR P, T) d Below Dark Surfa		Marl (F10) (L Depleted Oc	-	INTLE A	1641	Other	(Explain in Remarks)
11 1 '	d Below Dark Suria ark Surface (A12)	ce (ATT)	Iron-Mangan		•		T) <sup>3</sup> ladi	cators of hydrophytic vegetation and
	rairie Redox (A16) i	MLRA 150A						tland hydrology must be present,
	Aucky Mineral (S1)		Delta Ochric					less disturbed or problematic.
	Sleyed Matrix (S4)	. ,	Reduced Ve					·
Sandy F	Redox (S5)		Piedmont Flo	odplain 8	Soils (F19	) (MLRA 1	49A)	
Stripped	l Matrix (S6)		Anomalous E	Bright Loa	my Soils	(F20) <b>(ML</b> I	RA 149A, 153C	c, 153D)
	rface (S7) (LRR P,							
Restrictive	Layer (if observed	):						
Type: N								
Depth (in	ches):						Hydric Soil	Present? Yes  No No
Remarks: T	hick at 1-2"						•	

Project/Site: Glassboro-Camden Line	City/County: Gloucester	Sampling Date: 8/20/2013
Applicant/Owner: DRPA/ NJT	State:	NJ Sampling Point: WMT-B W
Investigator(s): DD, MF	Section, Township, Range: Mantu	ıa Township
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none)	): <u>Concave</u> Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	Lat: _39°44'58.74"N Long: _75° 8	8'2.00"W Datum: NAD 19{
Soil Map Unit Name: Jade Run fine sandy loam	, 0 to 2 percent slopes	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical fo	r this time of year? Yes 🗸 No (If no,	explain in Remarks.)
Are Vegetation Soil , or Hydrology	significantly disturbed? Are "Normal Circu	umstances" present? Yes ✓ No
Are Vegetation Soil or Hydrology		n any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site m	ap showing sampling point locations,	transects, important features, etc.
		3
Hydrophytic Vegetation Present?  Hydric Soil Present?  Yes	No Is the Sampled Area	
Wetland Hydrology Present?	No within a Wetland?	Yes No No
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	Seco	ondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	atic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	rogen Sulfide Odor (C1)	Moss Trim Lines (B16)
		Dry-Season Water Table (C2)
		Crayfish Burrows (C8)
		Saturation Visible on Aerial Imagery (C9)
		Geomorphic Position (D2) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	(AD) 4.5	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):	
Saturation Present? Yes No (includes capillary fringe)	Depth (inches): To Sur Wetland Hydro	logy Present? Yes V No No
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspections), if available	¢ "
Remarks:		
The state of the s		

201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Acer rubrum	100	<u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC:  (A)
2				Total Number of Dominant
3				Species Across All Strata: 9
4.				,
				Percent of Dominant Species That Are OBL FACIAL or FAC: 66
5				That Are OBL, FACW, or FAC: 60 (A/B)
6	400			Prevalence Index worksheet:
		= Total Cov		
50% of total cover: 50	20% of	f total cover:	20	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15' )				OBL species $0 \times 1 = 0$
1				FACW species $15$ $x 2 = 30$
				FAC species 160 x 3 = 480
2				FACU species 190 x 4 = 760
3				UPL species 0 x 5 = 0
4				Column Totals: 365 (A) 1270 (B)
5				Column Totals. See (A) 12.13 (B)
6				Prevalence Index = B/A = 3.4
		= Total Cov	ег	Hydrophytic Vegetation Indicators:
50% of total cover: 0		f total cover	0	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )				<del></del>
1. Ilex opaca	25	Υ	FAC	2 - Dominance Test is >50%
	15	<u>'</u>	FACW	3 - Prevalence Index is ≤3.01
2. Lindera benzoin				Problematic Hydrophytic Vegetation¹ (Explain)
3. Viburnum dentatum	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
·	50	= Total Cov		Delinicatio of 1770 Vogatation actual
7-70				Tree – Woody plants, excluding woody vines,
50% of total cover: <u>25</u>	20% of	f total cover:	10	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5' )				(7.6 cm) or larger in diameter at breast height (DBH).
1.Acer rubrum	<u>15</u>	<u>Y</u>	FAC_	Sapling – Woody plants, excluding woody vines,
2. Viburnum dentatum	10	Υ	FAC	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,
4				approximately 3 to 20 ft (1 to 6 m) in height.
5				
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9.				, , _
				Woody vine - All woody vines, regardless of height.
10				
11	25			
	$\overline{}$	= Total Cov		
50% of total cover: <u>12.5</u>	20% of	f total cover:	<u>5</u>	
Woody Vine Stratum (Plot size: 15')				
1. Vitis labrusca	75	Υ	FACU	
2 Parthenocissus quinquefolia	65	$\overline{Y}$	FACU	
3 Celastrus orbiculatus	50	<u>v</u>	FACU	
			. , .00	
4				
5,				Hydrophytic
	190	= Total Cov	er	Vegetation
50% of total cover: <u>95</u>	20% of	f total cover:	38	Present? Yes ₩ No No
				<u> </u>
Remarks: (If observed, list morphological adaptations belo	"'.Grour	ndcover is	mainly	vines

Sampling Point: WMT-B W

Profile Desc	cription: (Describe	to the dept	h needed to docu	ment the	indicator	or confir	n the absence o	f indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	_ <u> </u>	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-20	10YR 3/2	_ <u>88</u> .	10YR 5/3	10	<u> </u>	<u> PL</u>	<u>SL</u>	
			10YR 4/4	2	С	PL		
						· -	·	_
l ———							·	
					-	-		
							. <del></del> -	
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Maske	d Sand G	rains.	<sup>2</sup> Location: F	PL=Pore Lining, M=Matrix.
Hydric Soll	Indicators: (Appli	cable to all l	LR <u>Rs,</u> unless othe	rwise not	ted.)		<u>indi</u> cators fo	or Problematic Hydric Solis <sup>3</sup> :
Histosol	(A1)		Polyvalue B	elow Surfe	ace (S8) (	LRR S, T,	U) 🔲 1 cm Mu	ick (A9) (LRR O)
	oipedon (A2)		Thin Dark S				· —	ick (A10) (LRR S)
_	istic (A3)		Loamy Muck				I F	d Vertic (F18) (outside MLRA 150A,B)
11 1	en Sulfide (A4)		Loamy Gley			,	1 1	nt Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma		,			ous Bright Loamy Soils (F20)
	Bodies (A6) (LRR I	P. T. U)	Redox Dark		F6)			A 153B)
11 1	icky Mineral (A7) (L		Depleted Da	-				ent Material (TF2)
	esence (A8) (LRR		Redox Depr				1 1	allow Dark Surface (TF12)
17 1	ick (A9) (LRR P, T)	•	Marl (F10) (I		-,			xplain in Remarks)
	d Below Dark Surfa		Depleted Oc	-	/MLRA1	1511		,
11 1 '	ark Surface (A12)	•• (,	Iron-Mangar		•		. T) <sup>3</sup> Indica	tors of hydrophytic vegetation and
	rairie Redox (A16) (	MLRA 150A						nd hydrology must be present,
	Aucky Mineral (S1)		Delta Ochric					s disturbed or problematic.
	Sleyed Matrix (S4)	,,	Reduced Ve					
	Redox (S5)		Piedmont Fl					
11 1 -	Matrix (S6)			-			RA 149A, 153C,	153D)
. —	rface (S7) (LRR P,	S. T. U)				(, (	,,	,
	Layer (if observed							
Type: N	one `	,						
							Unidate Call D	No. 2012 Van Van Van
Depth (in							Hydric Soil P	Present? Yes V No No
Remarks: E	ecomes sand a	ıt 10-12 in	ches					
•								

Project/Site: Glassboro-Camden Line	_ City/County: Glou	cester	s	Sampling Date: 8/20/2013
Applicant/Owner: DRPA/NJT		State	e: <u>NJ</u> s	Sampling Point: WMT-C W
Investigator(s): DD, MF	_ Section, Township,	Range: Mant	tua Township	)
Landform (hillslope, terrace, etc.): Hillslope	_ Local relief (concav	e, convex, non	e): Concave	Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 149A Lat: 39.7	74913	Long: 75.1	3323	Datum: NAD 19
Soil Map Unit Name: JdrA - Jade Run fine sandy loam, 0 t	o 2 percent slope	∍s	NWI classificat	ion: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🗸 N	lo (If no	o, explain in Rer	narks.)
Are Vegetation Soil or Hydrology significant	tly disturbed?	Are "Normal Cire	cumstances" pre	esent? Yes 🗸 No
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	(A) (C)		ain any answers	ete only the
SUMMARY OF FINDINGS – Attach site map showing	ng sampling poir	nt locations	, transects, i	important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:	Is the Samp within a We		Yes	] No [
HYDROLOGY				
Wetland Hydrology Indicators:		Sec	Total at 78 and at an	rs (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	7701		Surface Soil Cr	SHAROLAND CONTROL
Surface Water (A1) Aquatic Fauna (E		<u> </u>	7	tated Concave Surface (B8)
High Water Table (A2)  Saturation (A3)  Marl Deposits (B)  Hydrogen Sulfide			Drainage Patte Moss Trim Line	7 A
	oheres along Living R	oots (C3)	=	ater Table (C2)
Sediment Deposits (B2) Presence of Red			Crayfish Burro	
	uction in Tilled Soils (0	26)	Saturation Visi	ble on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface	ce (C7)		Geomorphic Po	osition (D2)
Iron Deposits (B5) Other (Explain in	Remarks)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)			FAC-Neutral To	
Water-Stained Leaves (B9) Field Observations:	1		Sphagnum mo	ss (D8) (LRR T, U)
Surface Water Present? Yes No Depth (inche	20).			
Water Table Present? Yes No Depth (inche				
Saturation Present? Yes No Depth (inche	- 93/4/77	Wetland Hydr	ology Present?	Yes No No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspect	.ons), if availabl	ie:	
Remarks:				
Color de Carlos Colores				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30'	% Cover	Species?	Status	Number of Dominant Species
1 Acer rubrum	40	Υ	FAC	That Are OBL, FACW, or FAC: 5 (A)
2. Platanus occidentalis	40	${}$	FACW	
3 Quercus palustris				Total Number of Dominant
3. Quercus paiusins	<u>20</u>	<u>Y</u>	FACW	Species Across All Strata:
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 83 (A/B)
6				(115)
	100	= Total Cov		Prevalence Index worksheet:
50				Total % Cover of: Multiply by:
50% of total cover: <u>50</u>	20% of	ftotal cover		OBL species $0$ $x 1 = 0$
Sapling Stratum (Plot size: 15'				135 270
1				FACW species $\frac{135}{40}$ x 2 = $\frac{270}{100}$
2.				FAC species $40$ $\times 3 = 120$
				FACU species $0   x 4 = 0$
3				UPL species $0   x 5 = 0$
4				Column Totals: 175 (A) 390 (B)
5				Column Totals. 170 (A) 500 (B)
6				Prevalence Index = B/A = 2.2
		= Total Cov		
50% of total cover: 0			_	Hydrophytic Vegetation Indicators:
	20% 0	Total cover		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	0.5	\/	E A C) A /	2 - Dominance Test is >50%
1. Cornus sericea	25	<u>Y</u>	FACW	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				Problematic Hydrophytic Vegetation¹ (Explain)
3.				Problematic Hydrophytic Vegetation (Explain)
4				Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	25	= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: <u>12.5</u>	20% of	f total cover	5	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5' )				(7.6 cm) or larger in diameter at breast height (DBH).
	40	Υ	FACW	
1.Polygonum pensylvanicum				Sapling – Woody plants, excluding woody vines,
<sub>2.</sub> Carex sp.	20	<u>Y</u>	<u>NI</u>	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3. Quercus palustris	10	<u>N</u>	<u>FACW</u>	than 3 iii. (7.6 cm) DBH.
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10				Woody vine - All woody vines, regardless of height.
11	70			
	<u>70</u>	= Total Cov	er	
50% of total cover: <u>35</u>	20% of	ftotal cover	: 14	
Woody Vine Stratum (Plot size: 30')				
1,				
2				
3				
4				
5.				Lhudran hudla
	0	- Tatal Car		Hydrophytic Vegetation
<u> </u>		= Total Cov	_	Present? Yes No
50% oftotal cover: 0	20% of	ftotal cover		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Remarks: (If observed, list morphological adaptations belo	wr).			

Sampling Point: WMT-C W

Profile Des	cription: (Describe	e to the dep	th needed to docur	nent the	indicator	or confir	m the absence of ir	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	x Feature %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
(inches) 0-5	10YR 3/2	70	10YR 5/6	30	. <u>туре                                    </u>	M	CL	Remarks
5-20		93	10YR 5/6	- <del>50</del>	- <del>D</del>		CL —	
3-20	10YR 3/1	_ = ===================================				<u>M</u>		
			10YR 4/2		<u> D</u>	<u>PL</u>		
							· —— —	
			=Reduced Matrix, M			ains.		Pore Lining, M=Matrix.
		cable to all	LRRs, unless other		•			Problematic Hydric Solis <sup>3</sup> :
Histoso			Polyvalue Be				· —	(A9) (LRR O)
	pipedon (A2) listic (A3)		Thin Dark Su				I F	(A10) (LRR S) ertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye			. 0,		Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma					Bright Loamy Soils (F20)
11 7	Bodies (A6) (LRR		Redox Dark	,	,		(MLRA 1	•
	ucky Mineral (A7) <b>(l</b> resence (A8) (L <b>RR</b>		Depleted Dai				1 1	: Material (TF2) ow Dark Surface (TF12)
17 1	uck (A9) (LRR P, T)	•	Mari (F10) (L	,	ره-			ain in Remarks)
	d Below Dark Surfa		Depleted Oct	-	(MLRA 1	51)		· · · · · · · · · · · · · · · · · · ·
	ark Surface (A12)		Iron-Mangan		, , ,			s of hydrophytic vegetation and
	Prairie Redox (A16)					', U)		hydrology must be present,
1 - 7	Mucky Mineral (S1) Gleyed Matrix (S4)	(LKK U, S)	Delta Ochric Reduced Ver			OA. 150B		listurbed or problematic.
_	Redox (S5)		Piedmont Flo					
. —	d Matrix (S6)		Anomalous E	Bright Loa	my Soils (	F20) ( <b>ML</b> I	RA 149A, 153C, 153	ID)
	urface (S7) (LRR P,							
Type: N	Layer (if observed	ı):						
Depth (in							Hydric Soil Pres	sent? Yes 🗸 No
Remarks:							Tiyune con i ie.	SCIE: 103 - 100
ixciliarks.								

Project/Site: Glassboro-Camden Line	city/County: Gloucester	Sampling Date: 8/27/2013
Applicant/Owner: DRPA/NJT	State: NJ	Sampling Point: WMT-D W
Investigator(s): MF, DD, LR	Section, Township, Range: Mantua Towns	hip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): Concav	/e Slope (%): 0-2%
Subregion (LRR or MLRA): MLRA 149A	Lat: 39°44'48.82"N Long: 75° 7'57.97"W	
Soil Map Unit Name: Buddtown-Deptford complex	200000 <del>50</del>	cation: PFO1/SS1B
Are climatic / hydrologic conditions on the site typical for the		
Are Vegetation Soil or Hydrology	significantly disturbed? Are "Normal Circumstances"	
Are Vegetation Soil or Hydrology	naturally problematic? (If needed, explain any answ	8. <del>5. 1</del> . 3. 3.
See	showing sampling point locations, transect	
	No Is the Sampled Area	
ED - 25 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	No within a Wetland? Yes	No
Wetland Hydrology Present? Yes Remarks:	No	
Remarks.		
HYDROLOGY		
Wetland Hydrology Indicators:	Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is required; check a	2000 10 4000 mg - 10 10 10 10 10 10 10 10 10 10 10 10 10	Cracks (B6)
	CONTROL OF A CONTR	egetated Concave Surface (B8)
		atterns (B10)
	gen Sulfide Odor (C1)  Moss Trim I	
		Water Table (C2)
	nce of Reduced Iron (C4) Crayfish Bu	CANCEL CONTRACT CONTR
Drift Deposits (B3)	t Iron Reduction in Tilled Soils (C6) Saturation	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin N	Muck Surface (C7) Geomorphic	Position (D2)
Iron Deposits (B5) Other	(Explain in Remarks) Shallow Aq	uitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutra	I Test (D5)
Water-Stained Leaves (B9)	Sphagnum	moss (D8) (LRR T, U)
Field Observations:		
	epth (inches):	
	epth (inches):	
Saturation Present? Yes V No D (includes capillary fringe)	epth (inches): Surface Wetland Hydrology Prese	nt? Yes V No No
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous inspections), if available:	*
Remarks:		"
There is ponding away from the sampling are	ea that starts at 1-2 inches of standing water an	d may be as deep as 8"

201		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Acer rubrum	100	Y	<u>FAC</u>	That Are OBL, FACW, or FAC: $\frac{4}{}$ (A)
2.				
				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				
	100	= Total Cov	or .	Prevalence Index worksheet:
50% of total cover: 50				Total % Cover of: Multiply by:
50% of total cover:	20% o	total cover:		OBL species 45 x 1 = 45
Sapling Stratum (Plot size: 15' )				
1. Acer rubrum	10	Υ	FAC	FACW species x 2 =
2.				FAC species 110 x 3 = 330
				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: 115 (A) (B)
5				Column Totals. 110 (A) (B)
6				Prevalence Index = B/A = 375
		= Total Cov	_	Hydrophytic Vegetation Indicators:
50% of total cover: 5	20% o	f total cover:	2	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )				✓ 2 - Dominance Test is >50%
				<b>  </b>
1				3 - Prevalence Index is ≤3.0¹
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				1 In disastance of to relate a cit and continued to relate to any married
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				, ,
6		· <del></del>		Definitions of Five Vegetation Strata:
	0	= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: <u>0</u>	20% o	f total cover:	<u> </u>	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1.Ludwigia palustris	30	Υ	OBL	
2. Polygonum hydropiperoides	10			Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
		<u>Y</u>	OBL_	than 3 in. (7.6 cm) DBH.
3. Carex stricta	<u>5</u>	<u>N</u>	<u>OBL</u>	man o m. (7.0 om) BBH.
4				Shrub – Woody plants, excluding woody vines,
5,				approximately 3 to 20 ft (1 to 6 m) in height.
		· ——		
6				Herb – All herbaceous (non-woody) plants, including
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				' ' -
10.				Woody vine - All woody vines, regardless of height.
11	4E			
	45	= Total Cov	er	
50% of total cover: 22.5	20% o	f total cover:	: <u>9</u>	
Woody Vine Stratum (Plot size: 30')				
1				
2				
3				
4				
5.				Hydrophytic
	0	= Total Cov		Vegetation /
ean/ el		•	_	Present? Yes No
50% of total cover: 0		f total cover:	<u> </u>	
Remarks: (If observed, list morphological adaptations belo	<sup>⊮).</sup> Moss			
		sely Vege	tated	
	Spare	, .ogo		

Sampling Point: WMT-D W

Profile Desc	cription: (Describe	to the dep	th needed to docur	nent the	indicator	or confir	m the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
<u>0-12</u>	2.5Y 3/1	95	10 YR 5/1	5	<u>D</u>	<u> M</u>	SSI	Saturated
12-18	2.5Y 3/1	70	10 YR 6/2	30	D	M	SSI	Saturated
18-20	10 YR 6/3	75	10 YR 4/6	20	С	PL	SSI	Saturated
			10 YR 2/1	5 5	MS			
								· <del></del>
					-		· <del></del>	·
<del></del>						<del></del>	21 "	- <del> </del>
			Reduced Matrix, Mi LRRs, unless other			rains.		: PL=Pore Lining, M=Matrix. s for Problematic Hydric Solls <sup>3</sup> :
Histosol		cable to all	Polyvalue Be			IRRST		Muck (A9) (LRR O)
	pipedon (A2)		Thin Dark Su				· —	Muck (A10) (LRR S)
	istic (A3)		Loamy Muck				I F	ced Vertic (F18) (outside MLRA 150A,B)
11 1	en Sulfide (A4)		Loamy Gleye			•		nont Fl∞dplain Soils (F19) (LRR P, S, T)
Stratifie	d Layers (A5)		Depleted Ma	trix (F3)			Anom	alous Bright Loamy Soils (F20)
11 7	Bodies (A6) (LRR		Redox Dark				`	.RA 153B)
	ucky Mineral (A7) <b>(L</b>						1 1	Parent Material (TF2)
	resence (A8) (LRR		Redox Depre		8)			Shallow Dark Surface (TF12)
	uck (A9) (LRR P, T)		Marl (F10) (L	-	4001 10 4 4	1541	Other	(Explain in Remarks)
11 1 '	d Below Dark Surfa ark Surface (A12)	ce (A11)	Depleted Oci		•		T) <sup>3</sup> ladi	cators of hydrophytic vegetation and
	rairie Redox (A16) i	MLRA 1504						etland hydrology must be present.
	Mucky Mineral (S1)		Delta Ochric					less disturbed or problematic.
	Gleyed Matrix (S4)	. ,	Reduced Ver					·
Sandy F	Redox (S5)		Piedmont Flo	odplain S	Soils (F19	) (MLRA 1	49A)	
	d Matrix (S6)		Anomalous E	Bright Loa	my Soils	(F20) <b>(ML</b> I	RA 149A, 1530	C, 153D)
	rface (S7) (LRR P,							
Type: N	Layer (if observed	):						
1							11	1 B 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Depth (in	cnes):						Hydric Soi	I Present? Yes V No No
Remarks:								

Project/Site: Glassboro-Camden Line	City/County: Glouce	ester	Sampling Date: 8/27/2013
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WMT-D U
Investigator(s): MF, DD, LR	Section, Township, R	ange: Mantua Townsh	ip
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave,	convex, none): None	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A Lat:	_39°44'48.82"N	Long: 75° 7'57.97"W	Datum: NAD 198
Soil Map Unit Name: Bum-A - Buddtown-Deptford cor	nplex, 0 to 2 percent sl	opes NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Yes 🚺 No	(If no, explain in Re	emarks.)
Are Vegetation Soil or Hydrology sign	ificantly disturbed? Are	"Normal Circumstances" p	resent? Yes 🗸 No
Are Vegetation Soil or Hydrology natu	ırally problematic? (If r	needed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS - Attach site map sh	owing sampling point	locations, transects,	important features, etc.
Uludandadia Vanaddia Barrad			3.
Hydrophytic Vegetation Present? Yes	Is the Sample	ed Area	7 —
Wetland Hydrology Present? Yes No	within a Wetla	and? Yes	No <u>✓</u>
Remarks:	<u> </u>		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicat	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that	t apply)	Surface Soil (	Cracks (B6)
Surface Water (A1) Aquatic Fal	una (B13)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2) Marl Depos	sits (B15) (LRR U)	Drainage Pat	terns (B10)
Saturation (A3) Hydrogen S	Sulfide Odor (C1)	Moss Trim Lir	nes (B16)
Water Marks (B1) Oxidized R	hizospheres along Living Roo	ts (C3) Dry-Season V	Vater Table (C2)
Sediment Deposits (B2)	of Reduced Iron (C4)	Crayfish Burre	ows (C8)
	Reduction in Tilled Soils (C6	Saturation Vis	sible on Aerial Imagery (C9)
	Surface (C7)	Geomorphic I	
	lain in Remarks)	Shallow Aquit	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	. 55 4 M. Milana
Water-Stained Leaves (B9) Field Observations:	<u> </u>	Spnagnum m	oss (D8) (LRR T, U)
	(inches):		
Curiace Water Frederit: Fee House	(inches):		
		Vetland Hydrology Present	t? Yes No ✓
(includes capillary fringe)			tr res No
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspection	ns), if available:	
Remarks:			

Tree Stratum (Dioticize: OU )			Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species That Are OBL FACIAL & FAC: 6	
1. Acer rubrum	40	<u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC:	
2. Liquidambar styraciflua	<u>30</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant	
3. Fraxinus pennsylvanica	<u>30</u>	<u>Y</u>	<u>FACW</u>	Species Across All Strata: 10 (B)	
4					
5.				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)	
6.				Mat Ale CBL, FACIV, G FAC (A/B)	,
<u> </u>	100	———— = Total Co√	/or	Prevalence Index worksheet:	_
50% of total cover: 50				Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: 15' )	20% 01	total cover		OBL species 0 x 1 = 0	
	20	Υ	EACH	FACW species 50 x 2 = 100	
1. Quercus alba				FAC species 120 x 3 = 360	
2				FACU species 85 x 4 = 340	
3					
4					
5				Column Totals: <u>255</u> (A) <u>800</u> (B)	
6				Prevalence Index = B/A = 3.1	
	20	= Total Cov	<u></u>		
50% of total cover: 10				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: 15' )	2070 01	total cover		1 - Rapid Test for Hydrophytic Vegetation	
1 llex opaca	30	Υ	FAC	2 - Dominance Test is >50%	
•		· Y	FACW	3 - Prevalence Index is ≤3.01	
2. <u>llex verticillata</u>			TACVV	Problematic Hydrophytic Vegetation¹ (Explain)	
3					
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
5				be present, unless disturbed or problematic.	
6				Definitions of Five Vegetation Strata:	_
	50	= Total Cov	/er	- NAT	
50% of total cover: <u>25</u>				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.	
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).	
1.Viburnum dentatum	15	Υ	FAC		
2. Quercus alba	10	<u>'</u>	FACU	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
3. Acer rubrum	5	N	FAC	than 3 in. (7.6 cm) DBH.	
				, ,	
4. Dryopteris marginalis	5	<u>N</u>	<u>FACU</u>	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
5				approximately 5 to 20 it (1 to 6 iii) iii neight.	
6.					
				Herb – All herbaceous (non-woody) plants, including	
7.			_	herbaceous vines, regardless of size, and woody	
<del>-</del>			_	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately	
8			<u> </u>	herbaceous vines, regardless of size, and woody	
9.			<u> </u>	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately	
8				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
9.				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
8	35	= Total Cov		herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	_
8	35			herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
8	35 20% of	= Total Cov	7	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
89	35 20% of	= Total Cov	7 FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
8	35 20% of	= Total Cov	7	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
89	35 20% of	= Total Cov	7 FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
8	35 20% of 20	= Total Cov	7 FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
8	35 20% of 20	= Total Cov	7 FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.	
8	35 20% of 20 20	= Total Cover total cover	FACU FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic	
8	35 20% of 20 20	= Total Cover  Y Y  = Total Cover	FACU FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.	
8	35 20% of 20 20 50 20% of	= Total Cover total cover	FACU FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic Vegetation	
8	35 20% of 20 20 50 20% of	= Total Cover  Y Y  = Total Cover	FACU FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic Vegetation	
8	35 20% of 20 20 50 20% of	= Total Cover  Y Y  = Total Cover	FACU FACU	herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic Vegetation	

Sampling Point: WMT-D U

Profile Desc	cription: (Describe	to the depti	n needed to docum	nent the	indicator	or confir	m the absence of	indicators.)
Depth	Matrix			x Feature		12	T	Damada
(inches)	Color (moist)	<u> %</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-12	10 YR 4/3	- <del>100</del> -	10 YR 3/1					
12+	10 YR 5/6	_ <u>70</u>	10 th 3/1	30	<u> </u>	<u>M</u>	<u>SL</u> _	
					· —			_
1- 00							2	
			Reduced Matrix, MS RRs, unless other			ains.		_=Pore Lining, M=Matrix. r Problematic Hydric Solls <sup>3</sup> :
Histosol		cable to all L	Polyvalue Be		-	PP S T		ok (A9) (LRR O)
_	oipedon (A2)		Thin Dark Su					k (A10) (LRR S)
	stic (A3)		Loamy Mucky				I F	Vertic (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye	d Matrix (	(F2)		Piedmont	Floodplain Soils (F19) (LRR P, S, T)
I — T	d Layers (A5)		Depleted Mat					us Bright Loamy Soils (F20)
17 7 7	Bodies (A6) (LRR I		Redox Dark S Depleted Dar	,	,		(MLRA	·
	icky Mineral (A7) <b>(L</b> esence (A8) (L <b>RR</b> (		Redox Depre		, , ,		1 1	nt Material (TF2) llow Dark Surface (TF12)
17 1	ick (A9) (LRR P, T)	•	Mari (F10) (L	,	0,			plain in Remarks)
	d Below Dark Surfac		Depleted Och	-	(MLRA 1	51)	`	·
	ark Surface (A12)		iron-Mangane			•		ors of hydrophytic vegetation and
	rairie Redox (A16) (					; U)		d hydrology must be present,
I I T	Mucky Mineral (S1) ( Gleyed Matrix (S4)	LKK (), (S)	Delta Ochric Reduced Ver			.OΔ 150E		disturbed or problematic.
	Redox (S5)		Piedmont Flo	, ,	•	•	•	
19 1 *	Matrix (S6)			-		-	RA 149A, 153C, 1	53D)
	rface (S7) (LRR P,							
	Layer (if observed) ^^	):						
Туре: <u>N</u>			<del></del>					
	ches): N/A						Hydric Soil Pr	esent? Yes No
Remarks:								

Project/Site: Glassboro to Camden Line	City/County: Glot	ucester	Sampling Date: 8/20/2013
Applicant/Owner: DRPA/NJT	300	State: NJ	Sampling Point: WPT-C W
Investigator(s): DD, MF	Section, Township	o, Range: Pitman Borough	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (conca	ve, convex, none): Concave	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	Lat: 39°44'37.83"N	Long: 75° 7'54.65"W	Datum: NAD 198
Soil Map Unit Name: Buddtown-Deptford complex	ر, 0-2% slopes, Jade Rur	n fine sand NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for the	his time of year? Yes	No (If no, explain in Re	emarks.)
Are Vegetation Soil or Hydrology	78 141	Are "Normal Circumstances" p	resent? Yes V No
	1 1033	(If needed, explain any answer	75 An An
SUMMARY OF FINDINGS – Attach site map	Fig.		SEC ON MALDER IS. WE
			7
	No Is the Sam		¬ —
	No within a W	etland? Yes	No
Remarks:	10000000		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check al	il that apply)	Surface Soil (	Cracks (B6)
Surface Water (A1)	ic Fauna (B13)	Sparsely Veg	etated Concave Surface (B8)
S	Deposits (B15) (LRR U)	Drainage Pat	
	gen Sulfide Odor (C1)	Moss Trim Li	
	ed Rhizospheres along Living R		Nater Table (C2)
	nce of Reduced Iron (C4) at Iron Reduction in Tilled Soils (	Crayfish Burr	ows (C8) sible on Aerial Imagery (C9)
	Nuck Surface (C7)	Geomorphic	
	(Explain in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)	db/ 68	FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)		Sphagnum m	ioss (D8) (LRR T, U)
Field Observations:	Overforce		
	epth (inches): Surface		
	epth (inches):		
Saturation Present? Yes No D	epth (inches): Surface	Wetland Hydrology Presen	t? Yes No
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous inspec	tions), if available:	8
Remarks:			

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1 Liquidambar styraciflua	70	Υ	FAC	That Are OBL, FACW, or FAC:  (A)
2, Acer rubrum	40	$\overline{}$	FAC	111.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2
	<del>40</del>	<u> </u>	<u>rac                                    </u>	Total Number of Dominant
3				Species Across All Strata: O (B)
4,				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6.				(71b)
	110	 = Total Cov		Prevalence Index worksheet:
55				Total % Cover of: Multiply by:
50% of total cover: <u>55</u>	20% of	total cover		OBL species 35 x 1 = 35
Sapling Stratum (Plot size: 15')				FACW species $\frac{100}{100}$ $\frac{100}{200}$
1. Acer rubrum	30	Υ	FAC	
<sub>2</sub> Liquidambar styraciflua	30	Υ	FAC	1 AC species x 3 =
3		<u> </u>		FACU species $\underline{10}$ $x = \underline{40}$
3				UPL species $0$ $x = 0$
4				Column Totals: 315 (A) 785 (B)
5				Column Totals. (A)
6				Prevalence Index = B/A = 2.4
	60	= Total Cov	er	
50% of total cover: 30				Hydrophytic Vegetation Indicators:
	2070 01	CONTINUE	·	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				2 - Dominance Test is >50%
1				✓  3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4.				1
				Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	0	= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: 0	20% of	total cover	0	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1.Carex intumescens	50	Υ	FACW	
				Sapling – Woody plants, excluding woody vines,
2. Carex stricta	30	<u>Y</u>	OBL	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3. Carex gynandra	<u>25</u>	<u>N</u>	<u>FACW</u>	than o in. (7.0 onl) DBH.
4. Phragmites australis	15	N	FACW	Shrub – Woody plants, excluding woody vines,
5. Polystichum acrostichoides	10	$\overline{N}$	FACU	approximately 3 to 20 ft (1 to 6 m) in height.
6. Bidens frondosa	10	N	FACW	
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7. Juncus effusus	<u>5</u>	<u>N</u>	<u>OBL</u>	plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10				Woody vine - All woody vines, regardless of height.
<del>-</del>				
11	145			
		= Total Cov		
50% of total cover: <u>72.5</u>	20% of	total cover	<u> 29</u>	
Woody Vine Stratum (Plot size: 30')				
1,				
2				
3				
4				
5				Liveranhydia
	0	= Total Cov		Hydrophytic Vegetation
O	<del></del>			Present? Yes No
50% of total cover: 0		total cover	<u> </u>	
Remarks: (If observed, list morphological adaptations belo	w).			

Sampling Point: WPT-C W

Profile Des	cription: (Describe	to the depth	needed to docur	nent the i	ndicator	or confirm	n the absence of in	dicators.)
Depth (inches)	Matrix Color (moist)	<del></del> _	Redo	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16	10YR 2/1	- <del> </del>	COLOR (IIIOISI)	70	туре		SL	IVEHININS.
16-20	10YR 5/1	100 _					Loam	
10-20	101113/1							
								•
				- ——				
	oncentration, D=Dep					ains.		Pore Lining, M=Matrix.
I —	Indicators: (Applic	able to all LF			-			Problematic Hydric Solis <sup>3</sup> :
Histoso	i (A1) pipedon (A2)		Polyvalue Be				· —	(A9) (LRR O) (A10) (LRR S)
_	listic (A3)		Loamy Muck				I F	ertic (F18) (outside MLRA 150A,B)
1 -	en Sulfide (A4)		Loamy Gleye	-		,	Piedmont Fi	loodplain Soils (F19) (LRR P, S, T)
I	d Layers (A5)		Depleted Ma					Bright Loamy Soils (F20)
11 1 -	: Bodies (A6) (LRR F ucky Mineral (A7) (L		Redox Dark Depleted Dark	•	,		(MLRA 15	Material (TF2)
	resence (A8) (LRR U		Redox Depre				1 1	w Dark Surface (TF12)
17 1	uck (A9) (LRR P, T)		Marl (F10) (L	.RR U)				ain in Remarks)
II I '	d Below Dark Surfac	e (A11)	Depleted Oc				3	
	ark Surface (A12) Prairie Redox (A16) (l	MI RA 150A)	Iron-Mangan Umbric Surfa				·	of hydrophytic vegetation and hydrology must be present,
	Mucky Mineral (S1) (		Delta Ochric			, -,		isturbed or problematic.
Sandy (	Gleyed Matrix (S4)		Reduced Ver	, , ,				•
19 1 -	Redox (S5)	1	Piedmont Flo	-		-	-	<b>.</b> ,
	d Matrix (S6) urface (S7) ( <b>LRR P,</b> 3	 S. T. U)	Anomalous E	srignt Loar	ny Solis (i	-20) (MLR	RA 149A, 153C, 153	D)
Restrictive	Layer (if observed)						T	
Type: N	one		_					
Depth (in	iches):		<u> </u>				Hydric Soil Pres	ent? Yes  No No
Remarks:							•	

Project/Site: Glassboro to Camden Rail Line	City/County: Glot	ucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT	200	State: NJ	Sampling Point: WPT-D W
Investigator(s): MF, DD	Section, Township	, <sub>Range:</sub> <u>Pitman Townsh</u>	ip
Landform (hillslope, terrace, etc.): Depression	Local relief (conca	ve, convex, none): Concav	9 Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	Lat: 39.74495	Long: 75.13169	Datum: NAD 198
Soil Map Unit Name: Buddtown-Deptford complex	x, 0-2 percent slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes	No (If no, explain in R	
Are Vegetation Soil or Hydrology	53 50 50	Are "Normal Circumstances" p	
Are Vegetation Soil or Hydrology	i	(If needed, explain any answe	i i i i i i i i i i i i i i i i i i i
SUMMARY OF FINDINGS – Attach site map	7-20 19-10 No. 11		
			3
	No Is the Sam		
Hydric Soil Present?  Wetland Hydrology Present?  Yes  Yes	No within a W	etland? Yes	No
Remarks:	NO		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check a	II that apply)	Surface Soil	as all temperates
	tic Fauna (B13)	AND AND AN ANY AND ANY AREA OF THE ANY	getated Concave Surface (B8)
High Water Table (A2)	Deposits (B15) (LRR U)	Drainage Pa	3 .00
Saturation (A3)	gen Sulfide Odor (C1)	Moss Trim L	ines (B16)
	zed Rhizospheres along Living F	Roots (C3) Dry-Season	Water Table (C2)
	nce of Reduced Iron (C4)	Crayfish Bur	
	nt Iron Reduction in Tilled Soils (	1 - 10	isible on Aerial Imagery (C9)
	Muck Surface (C7) (Explain in Remarks)	Shallow Aqu	Position (D2)
Inundation Visible on Aerial Imagery (B7)	(Explain in Nemarks)	FAC-Neutral	canana di madia a
Water-Stained Leaves (B9)			noss (D8) (LRR T, U)
Field Observations:		-	
Surface Water Present? Yes V No C	Depth (inches): 0-4		
Water Table Present? Yes No	Depth (inches):		
	Depth (inches):	Wetland Hydrology Preser	nt? Yes No No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring wel	Laerial photos, previous inspec	tions) if available:	-
Beech se Necestada Bata (en earn gaage, mennennig wer	i, dendi prietes, previede inopes	dono), ii avallabio.	
Remarks:			
1			

Table Stratum (Pict size 30		Absolute Dominant Indicator	Dominance Test worksheet:
Acet		% Cover Species? Status	Number of Dominant Species
2. Liquidambar styracifilia  3.	1. Acer rubrum	30 Y FAC	
Second Second Process   Second Process	2 Liquidambar styraciflua	30 V FAC	
Percent of Commant Spacies   100   (AB   Cover   12   Cover   12   Cover   12   Cover   12   Cover   13   Cover   14   Cover   15   C	· · ·	_ 00	/
8	3		Species Across All Strata:
Think Are O.B.L., PACKV, or FACL: 100 (ANS Foreign and Area of the part of t	4		Devent of Deminant Species
Frevalence Index worksheet:   Total Scover   12   15	5.		
Sacilina Stratum (Plot size: 15'   15   20% of total cover.   12   20% of total cover.   20% of tota			mar Are OBE, I AOV, O I AO (AB)
Sacina Stratum (Plot size: 15'   1	·	60 Tatal 2	Prevalence Index worksheet:
Sacind Stratum (Piot size: 15   )	00		Total % Cover of: Multiply by:
FACW species   50	50% of total cover: <u>30</u>	20% of total cover:	
FAC species   60	Sapling Stratum (Plot size: 15')		OBL species x 1 =
FAC species   X 3 = 10			FACW species 50 x 2 = 100
2			FAC species $60   x 3 = 180$
UPL species			
Column Totals: 140	3	- — — — —	
Column Totals: 140	4		
Prevalence Index = B/A = 2.2			Column Totals: <u>140</u> (A) <u>310</u> (B)
Hydrophytic Vegetation Indicators:   1 - Rapid Test for Hydrophytic Vegetation   2 - Definitions of Hydrophytic Vegetation   2 - Definitions of Hydrophytic Vegetation   (Explain)   3 - Prevalence index is \$3.0°			
Shrub Sirstum (Pict size: 15' )  1.	b	- — — — —	Prevalence Index = B/A = 2.2
1 - Rapid Test for Hydrophytic Vegetation   1 - Rapid Test for Hydrophytic Vegetation   2 - Dominance Test is 5-80%   2 - Dominance Test is 5-0%   2 - Dominance T		O = Total Cover	Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 15'	50% of total cover:	20% of total cover:	
1.			1 <del></del>
Problematic Hydrophytic Vegetation* (Explain)			
1			3 - Prevalence Index is ≤3.01
1	2		Problematic Hydrophytic Vegetation¹ (Explain)
A			
Depresent, unless disturbed or problematic.			1
Definitions of Five Vegetation Strata:   Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).   Phragmites australis			
Company   Comp	5		be present, unless disturbed or problematic.
Company   Comp	6		Definitions of Five Vegetation Strata:
Solid Cover   20% of total cover   20% of total cover   3   20% of total cover   3   3   3   4   5   5   5   6   6   6   6   6   6   6			
Herb Stratum (Plot size: 5'   )   1.Phragmites australis   50	50% of total cover:		
Phragmites australis   50	· · · · · · · · · · · · · · · · · · ·	20 % of total cover:	
2. Juncus effusus 30 Y OBL 30 Juncus effusus 30 Y OBL 30 Juncus effusus 30 Y OBL 30 Juncus effusus 20 Juncus 20 Juncus effusus 20 Juncus 20		50 V	( ) to striy of larger in diameter at breast neight ( bbriy.
than 3 in. (7.6 cm) DBH.  than 3 in. (7.6 cm) DBH.  than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody Vine – All woody vines, regardless of height.  Woody Vine Stratum (Plot size: 30' )  1.		_ <u>50                                   </u>	Sapling – Woody plants, excluding woody vines,
Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	<sub>2.</sub> Juncus effusus	30 Y OBL	
4	3		than 3 in. (7.6 cm) DBH.
5			Observe 100 and a state of the state of the state of
6			
7	5		approximatory 5 to 20 it (1 to 5 m) in neight.
herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.   10.	6		Herb – All herbaceous (non-woody) plants, including
8	7		
9			
10			3 ft (1 m) in height.
10	9		Manager visit All was devicined as a small and of beingt
11	10		woody vine - All woody vines, regardless of fielght.
80			
50% of total cover: 40	· · · ·	80	
Woody Vine Stratum (Plot size: 30'   )	40	= Total Cover	
1		20% of total cover: <u>16</u>	
1	Woody Vine Stratum (Plot size: 30' )		
2			
3			
4			
5	3		
5	4		
0 = Total Cover Vegetation Present? Yes No			Hydronhydo
50% of total cover: 20% of total cover: Present? Yes No		0 - Tatal Cayes	
50% of total cover: 20% of total cover:		= Total Cover	
Remarks: (If observed, list morphological adaptations below).	50% of total cover:	20% of total cover:	1111
	Remarks: (If observed, list morphological adaptations beli	lowr).	
	· - ·		

Sampling Point: WPT-D W

Profile Desc	ription: (Describe	e to the depti	n needed to docu	ment the i	ndicator	or confirm	n the absence o	f indicators.)
Depth	<u>Matrix</u>			x Feature:				
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u> _	Remarks
0-6	10YR3/1	_ <u>100</u> _					SiL _	
<u>6-18</u>	10YR5/1	<u> 100</u> _					SiL	
								_
l <del></del> -								
l <del></del>								
	oncentration, D=De					ains.		PL=Pore Lining, M=Matrix.
I —	Indicators: (Appli	cable to all L			-			or Problematic Hydric Solis <sup>3</sup> :
Histosol	oipedon (A2)		Polyvalue Bark St					ick (A9) (LRR O) ick (A10) (LRR S)
_	istic (A3)		Loamy Muck				I F	d Vertic (F18) (outside MLRA 150A,B)
11 1	en Sulfide (A4)		Loamy Gley			-,	I I	nt Floodplain Soils (F19) (LRR P, S, T)
Stratifie	d Layers (A5)		Depleted Ma	trix (F3)			Anomalo	ous Bright Loamy Soils (F20)
177	Bodies (A6) (LRR		Redox Dark	,	,			A 153B)
	icky Mineral (A7) (L		Depleted Da				1 1	ent Material (TF2)
	esence (A8) (LRR Jck (A9) (LRR P, T)		Redox Depre	,	8)			allow Dark Surface (TF12) ixplain in Remarks)
	d Below Dark Surfa		Depleted Oc	-	(MLRA 15	51)	Other (E	Apiaii iii Nemarksy
	ark Surface (A12)	( ,	Iron-Mangan		•		, T) <sup>3</sup> Indicat	tors of hydrophytic vegetation and
	rairie Redox (A16)		Umbric Surfa	ace (F13) (	LRR P, T,	, U)	wetla	nd hydrology must be present,
I I T	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric					s disturbed or problematic.
_	Sleyed Matrix (S4)		Reduced Ve					
19 1 -	Redox (S5) I Matrix (S6)		Piedmont Flo	-		-	ғяд) RA 149A, 153С, 1	153D)
. —	rface (S7) (LRR P,	S, T, U)		ong it Loui	113 00:13 (1	20) (11121	tr 1402, 1000, 1	,
Restrictive	Layer (if observed							
Type: N	one							
Depth (in	ches):						Hydric Soil P	resent? Yes No
Remarks:							l	

Project/Site: Glassboro-Camder	n Line	City/C	ounty: Gloucester		Sampling Date:	8/20/2013
Applicant/Owner: DRPA/NJT			ounty: Gloucester	State: NJ	Sampling Point:	WPT-B W
Investigator(s): DD, MF			on, Township, Range: _		, 3	
	Hillslope	Local	relief (concave, convex	(, none): concave	Slop	pe (%): 0-2
Subregion (LRR or MLRA): MLRA	149A	 Lat: 39°43'26.8	7"N Long:	75° 7'38.24"W	 Da	atum: NAD 1983
Landform (hillslope, terrace, etc.): _ Subregion (LRR or MLRA): MLRA Soil Map Unit Name: Fallsington-Un	ban land complex, Ur	ban land-Sassafras co	mplex, 0 to 5 percent sl	opes NWI classific	ation: PFO1A	
Are climatic / hydrologic conditions						
Are Vegetation, Soil						No
Are Vegetation, Soil						
SUMMARY OF FINDINGS -						eatures, etc.
Livelyne who the Memorate time Dune and O	X	Na				
Hydric Soil Present?	Yes X	_ No	Is the Sampled Area			
Hydric Soil Present? Wetland Hydrology Present?	Yes X	No	within a Wetland?	Yes <u>^</u>	No	_
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	•	ftwo required)
Primary Indicators (minimum of or				Surface Soil		0 ( (D0)
Surface Water (A1) High Water Table (A2)		atic Fauna (B13) I Deposits (B15) <b>(LRF</b>	2 II/	Drainage Pa	getated Concave	Surface (B8)
Saturation (A3)		rogen Sulfide Odor (0		Moss Trim Li		
Water Marks (B1)			long Living Roots (C3)		Water Table (C2)	)
Sediment Deposits (B2)	Pres	sence of Reduced Iron	n (C4)	Crayfish Buri	rows (C8)	
Drift Deposits (B3)		ent Iron Reduction in	Tilled Soils (C6)	_	sible on Aerial Im	nagery (C9)
Algal Mat or Crust (B4)		Muck Surface (C7)	·a)	=	Position (D2)	
☐ Iron Deposits (B5)☐ Inundation Visible on Aerial Ir		er (Explain in Remark	.s)	☐ Shallow Aqui	` '	
Water-Stained Leaves (B9)					noss (D8) <b>(LRR T</b>	ː, U)
Field Observations:						
	es X No					
		Depth (inches):			V	
Saturation Present? Ye (includes capillary fringe)	es X No	Depth (inches): to su	Wetland	Hydrology Presen	t? Yes <u>^</u>	_ No
Describe Recorded Data (stream	gauge, monitoring w	ell, aerial photos, pre	vious inspections), if av	/ailable:		
Remarks:						

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

5 0. 1 (5) 1 : 30'				
		Dominant		Dominance Test worksheet:
ree Stratum (Plot size: 30' ) Acer rubrum	<u>% Cover</u> 90	Species? Y	FAC	Number of Dominant Species
				That Are OBL, FACW, or FAC: 4 (A)
•				Total Number of Dominant
				Species Across All Strata: 5 (B)
·				Percent of Dominant Species
j				That Are OBL, FACW, or FAC: 80 (A/B
5				
·				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
	90	= Total Cov	er	OBL species $\frac{35}{50}$ $\times 1 = \frac{35}{100}$
50% of total cover: 45	20% of	total cover:	18	FACW species $\frac{50}{110}$ $\times 2 = \frac{100}{200}$
Sapling/Shrub Stratum (Plot size: 15' )				FAC species $\frac{110}{50}$ $\times 3 = \frac{330}{500}$
Rosa multiflora	40	Υ	FACU	FACU species 50 x 4 = 200
Ilex verticillata	10	N	FACW	UPL species $0 \times 5 = 0$
i.				Column Totals: <u>245</u> (A) <u>665</u> (B)
				D 1 1 27
				Prevalence Index = B/A = $\frac{2.7}{}$
5.				Hydrophytic Vegetation Indicators:
). ,				1 - Rapid Test for Hydrophytic Vegetation
<u>,                                      </u>				2 - Dominance Test is >50%
3				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
25		= Total Cov		☐ Problematic Hydrophytic Vegetation¹ (Explain)
50% of total cover: 25	20% of	total cover:		
Herb Stratum (Plot size: 5' )	0.5	V	OBI	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	25	Υ	OBL	be present, unless disturbed or problematic.
Impatiens capensis	25	Υ	FACW	Definitions of Four Vegetation Strata:
Impatiens capensis Onoclea sensibilis		Y N		Definitions of Four Vegetation Strata:
Impatiens capensis Onoclea sensibilis Urtica dioica	25	<del></del>	FACW	
Impatiens capensis Onoclea sensibilis Urtica dioica	25 15	N	FACW FACW	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia	25 15 15	N N	FACW FAC	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.
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum	25 15 15 10	N N N	FACW FACW FAC FACU	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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum	25 15 15 10	N N N	FACW FACW FAC FACU	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.
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum	25 15 15 10	N N N	FACW FACW FAC FACU	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.
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum	25 15 15 10 10	N N N N	FACW FACW FAC FACU	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.
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  O. O.	25 15 15 10 10	N N N N	FACW FACW FAC FACU	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o 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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  O.  1.	25 15 15 10 10	N N N N	FACW FACW FAC FACU	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.
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  O.  1.	25 15 15 10 10	N	FACW FAC FACU OBL	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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  0. 1.	25 15 15 10 10	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL	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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  O.  1.  2.  50% of total cover: 50	25 15 15 10 10	N	FACW FAC FACU OBL	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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  O.  O.  1.  2.  Solve of total cover: 50  Voody Vine Stratum (Plot size: 5')	25 15 15 10 10 10 100 20% of	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL  er 20	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
Impatiens capensis  Onoclea sensibilis  Urtica dioica  Parthenocissus quinquefolia  Polygonum sagittatum  O.  1.  2.  50% of total cover: 50  Woody Vine Stratum (Plot size: 5' )  Toxicodendron radicans	25 15 15 10 10	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL	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
Impatiens capensis Onoclea sensibilis Urtica dioica Parthenocissus quinquefolia Polygonum sagittatum  Onoclea sensibilis Folygonum sagittatum  Folygonum sagi	25 15 15 10 10 10 100 20% of	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL  er 20	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o 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
Polygonum sagittatum  Polygonum sagittatum sagittatum  Polygonum sagittatum sagittatum  Polygonum sagittatum s	25 15 15 10 10 10 100 20% of	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL  er 20	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
Impatiens capensis  Onoclea sensibilis  Urtica dioica  Parthenocissus quinquefolia  Polygonum sagittatum  Onoclea sensibilis  Formation of the process of th	25 15 15 10 10 10 100 20% of	N N N N N N N N N N N N N N N N N N N	FACW FAC FACU OBL  er 20	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
Impatiens capensis  Onoclea sensibilis  Urtica dioica  Parthenocissus quinquefolia  Polygonum sagittatum  Onoclea sensibilis  Farthenocissus quinquefolia  Polygonum sagittatum  Onoclea sensibilis  Forthenocissus quinquefolia  Forthenocissus quinque	25 15 15 10 10 10 20% of	N N N N N N N N N N N N N N N N N N N	FACW FACW FACU OBL  er 20 FAC	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.
Impatiens capensis  Onoclea sensibilis  Urtica dioica  Parthenocissus quinquefolia  Polygonum sagittatum  Onoclea sensibilis  Formation of the process of th	25 15 15 10 10 10 20% of	N N N N N N N N N N N N N N N N N N N	FACW FACW FACU OBL  er 20 FAC	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.

SOIL Sampling Point: WPT-B W

	-	e to the dep	th needed to docu			r or confirr	n the absence	of indicate	ors.)	
Depth Matrix (inches) Color (moist) %		Color (moist)	Redox Features Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>			Texture	Texture Remarks			
0-3	10YR 2/1	100	<u>Color (moloc)</u>				Sand-Silt	Saturate		_
3-20	10YR 3/2	90	7.5YR 4/6	5		PL			<del>-</del>	
<del>5-20</del>	101113/2									
			10YR 3/3	5	<u>C</u>	_ <u>M</u>				
				_				-		
1Tuno: C-C	`anaantration D=Da	nlotion DM:		C-Maaka	d Sand C	roino	<sup>2</sup> L coation:	DI -Doro I	ining, M=Matr	
			LRRs, unless othe			irairis.			matic Hydric	
Histoso			Polyvalue Be			IRRST		Muck (A9) <b>(L</b>	·=	
	pipedon (A2)		Thin Dark Su				. —	ииск (до) <b>(2</b> Ииск (А10) (	-	
_	listic (A3)		Loamy Muck							MLRA 150A,B)
Hydrog	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Piedm	ont Floodpla	ain Soils (F19	(LRR P, S, T)
	d Layers (A5)		Depleted Ma					_	Loamy Soils	(F20)
	Bodies (A6) (LRR		Redox Dark					<b>RA 153B)</b> arent Mater	:-I (TEO)	
_	ucky Mineral (A7) <b>(I</b> resence (A8) <b>(LRR</b>		Depleted Da						ıaı (1F2) ‹ Surface (TF <sup>2</sup>	12)
	uck (A9) (LRR P, T)		Marl (F10) (I		0)			Explain in f	•	12)
	ed Below Dark Surfa		Depleted Oc	•	(MLRA	151)		(=/4	toarrio,	
Thick D	ark Surface (A12)		Iron-Mangar	ese Mas	ses (F12)	(LRR O, P	, <b>T)</b> <sup>3</sup> lndid	cators of hyd	drophytic vege	tation and
	Prairie Redox (A16)	-	•		-	-		-	ogy must be p	
=	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric					ess disturbe	ed or problema	atic.
_	Gleyed Matrix (S4)		Reduced Ve		-		•			
	Redox (S5) d Matrix (S6)		Piedmont Flo				49A) RA 149A, 153C	: 153D)		
=	urface (S7) <b>(LRR P,</b>	S. T. U)	Anomaious i	Jilgili Loc	inly cons	(1 20) <b>(IIII)</b>	(A 145A, 155C	, 1000)		
	Layer (if observed									
Type: N	one									
Depth (ir	nches):						Hydric Soil	Present?	Yes X	No
Remarks:										

Project/Site: Glassboro-Camden Line City/0	County: Gloucester Sampling Date: 8-20-2013
Applicant/Owner: DRPA/NJT	State: NJ Sampling Point: WPT-B U
Investigator(s): DD, MF Section	on, Township, Range: Pitman Borough
Landform (hillslope, terrace, etc.): Hillslope	relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 149A Lat: 39°43'26	87"N Long: 75° 7'38.24"W Datum: NAD 19{
Soil Map Unit Name: Fallsington-Urban land complex, Urban lar	2000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation Soil or Hydrology significantly distu	
Are Vegetation Soil or Hydrology naturally problem	
SUMMARY OF FINDINGS – Attach site map showing sar	
- Attach site map showing sai	iping point locations, transects, important leatures, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area
Hydric Soil Present? Yes No	within a Wetland?
Wetland Hydrology Present? Yes No	
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)  Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Marl Deposits (B15) (LR	
Saturation (A3) Hydrogen Sulfide Odor (	
Water Marks (B1) Oxidized Rhizospheres	along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2)  Presence of Reduced Iron	on (C4) Crayfish Burrows (C8)
Drift Deposits (B3)	
Algal Mat or Crust (B4)  Thin Muck Surface (C7)  Other (Crust in Page 1)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remar Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)  FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No Pepth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No ✓
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	avious inspections) if available:
Describe Necorded Data (Stream gauge, monitoring well, acrial priotos, pro	vious inspections), if available.
Remarks:	
I	

20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		<u>Species?</u>		Number of Dominant Species
1. Fraxinus pennsylvanica	30	. <u>Y</u>	<u>FACW</u>	That Are OBL, FACW, or FAC: 4 (A)
2. Acer saccharum	<u>30</u>	<u> Y</u>	<u>FACU</u>	Total Number of Dominant
3. Acer rubrum	30	<u>Y</u>	FAC	Species Across All Strata: 6 (B)
4.	_			
5				Percent of Dominant Species That Are ORL FACIAL or FAC: 66
				That Are OBL, FACW, or FAC: 00 (A/B)
6				Prevalence Index worksheet:
45		_= Total Cov		Total % Cover of: Multiply by:
50% of total cover: <u>45</u>	20% c	of total cover	: 18	
Sapling Stratum (Plot size: 15' )				OBL species $\frac{0}{70}$ $x = \frac{0}{140}$
1. <u>llex verticillata</u>	40	Υ	FACW	FACW species $70$ $x = 140$
				FAC species 60 x 3 = 180
2				FACU species <u>40</u> x <b>4</b> = <u>160</u>
3				UPL species 30 x 5 = 150
4				Column Totals: 200 (A) 630 (B)
5				Column Totals. 200 (A) 300 (B)
6				Prevalence Index = B/A = 3.15
		= Total Cov	_	Hydrophytic Vegetation Indicators:
50% of total cover: 20	20% c	of total cover	: 8	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				✓ 2 - Dominance Test is >50%
1				, , , , , , , , , , , , , , , , , , ,
				3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
	0	= Total Cov		
500/ -51-1-1 0		_	_	Tree – Woody plants, excluding woody vines,
50% of total cover: 0	20% c	of total cover	:	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5'			<b>-</b> 40	(7.6 cm) of larger in diameter at breast neight (DBH).
1.Toxicodendron radicans	30	<u> Y                                   </u>	FAC_	Sapling – Woody plants, excluding woody vines,
<sub>2.</sub> Vinca	30	Υ	UPL	approximately 20 ft (6 m) or more in height and less
3. Parthenocissus quinquefolia	5	<u>N</u>	FACU	than 3 in. (7.6 cm) DBH.
4 Dryopteris marginalis	<u> </u>	<u> </u>	FACU	Shrub – Woody plants, excluding woody vines,
	- —	- 11	17100	approximately 3 to 20 ft (1 to 6 m) in height.
5		. ——		
6		. ——		Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody
8.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9				o it (1111) if neight.
				Woody vine - All woody vines, regardless of height.
10				
11	<del></del>			
	70	= Total Cov	/er	
50% of total cover: <u>35</u>	20% c	of total cover	: <u>14</u>	
Woody Vine Stratum (Plot size: 30')				
1.				
2				
3		. ——		
4				
5				Hydrophytic
	0	= Total Co	 /er	Vegetation
50% oftotal cover: 0	2004 -	of total cover	_	Present? Yes No
		n total cover	· <del></del>	
Remarks: (If observed, list morphological adaptations beli	OW/).			

Sampling Point: WPT-B U

Depth   Matrix   Redox Features   Color (moist)   %   Type¹   Loc²   Texture   Remarks
0-16 10YR 2/2 100 SIL
16-20 10YR 4/3 70 10YR 3/2 30 C M SIL
Type: C=Concentration D=Depletion PM=Reduced Matrix MS=Masked Sand Grains 21 coation: PI =Pore Lining M=Matrix
<sup>1</sup> Type: C=Concentration D=Depletion PM=Reduced Matrix MS=Masked Sand Grains <sup>2</sup> Location: PL=Pore Lining M=Matrix
<sup>1</sup> Type: C=Concentration D=Depletion PM=Reduced Matrix MS=Masked Sand Grains <sup>2</sup> Location: PL=Pore Lining M=Matrix
Type: C=Concentration D=Depletion PM=Reduced Matrix MS=Masked Sand Grains 21 coation: PI =Pore Lining M=Matrix
<sup>1</sup> Type: C=Concentration D=Depletion PM=Reduced Matrix MS=Masked Sand Grains <sup>2</sup> Location: PL=Pore Lining M=Matrix
Type: C=Concentration D=Depletion PM=Peduced Matrix MS=Masked Sand Grains 2 coation: PI =Pose Lining M=Matrix
Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <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 150A,B)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material (TF2)
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)
Depleted Below Dark Surface (A11)  Depleted Ochric (F11) (MLRA 151)
Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T) 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)
Dark Surface (S7) (LRR P, S, T, U)  Restrictive Layer (if observed):
Type: None
Depth (inches): Hydric Soil Present? Yes No
Remarks:

Project/Site: Camden-Glassboro Line	City/County: Gloucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT	State: NJ	Sampling Point: WGO-C W
Investigator(s): DD, AK	Section, Township, Range: Glassboro	
Landform (hillslope, terrace, etc.): terrace	Local relief (concave, convex, none): CONCAVE	Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 149A	Lat: 39.69836 Long: 75.12364	Datum: NAD 198
Soil Map Unit Name: Hammonton loamy sand,		cation: PFO1E
Are climatic / hydrologic conditions on the site typical	or this time of year? Yes 🗸 No (If no, explain in F	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 answe	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site r	nap showing sampling point locations, transects	s, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:	No Sampled Area within a Wetland? Yes ✓	No No
HYDROLOGY		
Wetland Hydrology Indicators:	Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; chec	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	And a superior of the state of
		getated Concave Surface (B8)
	arl Deposits (B15) (LRR U)	
	rdrogen Sulfide Odor (C1)  Moss Trim L  kidized Rhizospheres along Living Roots (C3)  Dry-Season	Water Table (C2)
	esence of Reduced Iron (C4)  Crayfish Bur	STATE OF THE STATE
		isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	in Muck Surface (C7) Geomorphic	Position (D2)
Iron Deposits (B5)	her (Explain in Remarks) Shallow Aqu	itard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)	Sphagnum r	noss (D8) (LRR T, U)
Field Observations:	7	
Surface Water Present? Yes No	Depth (inches): 0-8	
Water Table Present? Yes No ✓ Saturation Present? Yes ✓ No	Depth (inches):  Depth (inches):  Wetland Hydrology Preser	nt? Yes 🗸 No
(includes capillary fringe)	Section Control of the Control of th	it? res No
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspections), if available:	
Remarks:		

T 0: 4 (5) 4 (5)		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30'  Acer rubrum	<u>% Cover</u> 40	<u>Species?</u> Y	FAC	Number of Dominant Species That Are ORL FACINGS FACINGS
				That Are OBL, FACW, or FAC:
Liquidambar styraciflua	40	Y		Total Number of Dominant Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 88.7% (A/B)
o	80	= Total Co		Prevalence Index worksheet:
50% of total cover: 40				Total % Cover of: Multiply by:
50% of total cover: 40	20% 0	rtotal cover	<del></del>	OBL species 50 x 1 = 50
Sapling Stratum (Plot size: 15' )	15	V	EAC	FACW species 20 x 2 = 40
1. Acer negundo	. 15	. <u>Y</u>	FAC	FAC species $130$ $x_3 = 390$
2				1
3				
4				UPL species x 5 =
5.				Column Totals: <u>210</u> (A) <u>520</u> (B)
6				Daniel Dia 2 47
	15	= Total Cov		Prevalence Index = B/A = 2.47
7.5			_	Hydrophytic Vegetation Indicators:
50% of total cover: <u>7.5</u>	20% 0	f total cover		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15'	00	V	EAC	2 - Dominance Test is >50%
1. Smilax rotundifolia	20	. <u>Y</u>	FAC	<b>√</b> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Lonicera tatarica	10	<u>Y</u>	FACU	Problematic Hydrophytic Vegetation¹ (Explain)
3. Cornus sericea	20	N	<b>FACW</b>	
4.				16.45.45
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				L ·
6				Definitions of Five Vegetation Strata:
		•		Tree – Woody plants, excluding woody vines,
50% of total cover: <u>25</u>	20% o	f total cover	: 10	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1,Juncus effusus	50	Υ	OBL	Sapling – Woody plants, excluding woody vines,
2				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,
4.				approximately 3 to 20 ft (1 to 6 m) in height.
5				
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10				Woody vine - All woody vines, regardless of height.
11.				
	50	= Total Cov		
25				
50% of total cover: <u>25</u>	20% 0	ftotal cover	: 10	
Woody Vine Stratum (Plot size: 30')	4.5	V	E40	
1. Lonicera japonica	15	. <u>Y</u>	<u>FAC</u>	
2				
3				
4.				
5		·		
<u> </u>	^			Hydrophytic Vegetation
		= Total Cov		Present? Yes No
50% of total cover:		r total cover		
Remarks: (If observed, list morphological adaptations belo	ow).			

Sampling Point: WGO-C W

Profile Des	cription: (Describe	to the depth	needed to docum	nent the i	ndicator	or confirm	n the absence of in	ndicators.)
Depth (inches)	Matrix Color (moist)	<del></del> _	Redox Color (moist)	x Feature: %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-20	10YR3/1		10YR5/4	2	D	PL	SL	Remarks
0-20	10113/1	_ = = = = =	101110/1			<u> </u>	<u> </u>	
-								_
¹Type: C=C	concentration, D=De	pletion, RM=R	Reduced Matrix, MS	S=Masked	Sand Gr	ains.	<sup>2</sup> Location: PL=	Pore Lining, M=Matrix.
	Indicators: (Applie	cable to all L	RRs, unless other	wise not	∍d.)		Indicators for F	Problematic Hydric Solis <sup>3</sup> :
Histoso			Polyvalue Be				· —	(A9) (LRR O)
_	pipedon (A2) listic (A3)		Thin Dark Su				I F	(A10) (LRR S) ertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye			(0)	l I	floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Mat		,			Bright Loamy Soils (F20)
1 1 -	Bodies (A6) (LRR F		Redox Dark 8	-	*		(MLRA 1	
	ucky Mineral (A7) (L		Depleted Dar				1 1	: Material (TF2)
17 1	resence (A8) (L <b>RR I</b> uck (A9) (L <b>RR P, T</b> )	-	Redox Depre		0)			ow Dark Surface (TF12) ain in Remarks)
	d Below Dark Surface		Depleted Och	-	(MLRA 1	51)	other (Exp.	an in Normanio)
	ark Surface (A12)		Iron-Mangane		, , ,			s of hydrophytic vegetation and
	Prairie Redox (A16) (					', U)		hydrology must be present,
	Mucky Mineral (S1) ( Gleyed Matrix (S4)	LKK U, S)	Delta Ochric Reduced Ver			NA 1508		listurbed or problematic.
_	Redox (S5)		Piedmont Flo	, , ,				
Strippe	d Matrix (S6)		Anomalous B	right Loar	ny Soils (	F20) (MLF	RA 149A, 153C, 153	D)
	urface (S7) (LRR P,							
Type: N	Layer (if observed) one	):						
Depth (ir							Hydric Soil Pres	sent? Yes No
Remarks:							nyulic Soli Fies	sent? res
ixemaiks.								

Project/Site: Glassboro to Camden Rail Line	City/County: Glou	ucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WGO-C U
Investigator(s): DD, AK	Section, Township	, Range: Glassboro	
Landform (hillslope, terrace, etc.): terrace	Local relief (conca	ve, convex, none): none	Slope (%): <u>0-3</u>
Subregion (LRR or MLRA): MLRA 149A	_ Lat: <u>39.698559</u>	Long: -75.12309	Datum: NAD 198
Soil Map Unit Name: Hammonton loamy sand, C	to 5 percent slopes	NWI classific	cation: PFO1E
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No (If no, explain in R	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 answe	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	ap showing sampling poi	nt locations, transects	, important features, etc.
Hudranhutia Vagatatian Present2	No La tha Sam	a 50 %	- 3
Hydrophytic Vegetation Present? Yes Yes	No Is the Sam	pled Area	¬
Wetland Hydrology Present? Yes	No within a W	etland? Yes	No V
Remarks:	<b>▼</b>		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil	Cracks (B6)
Surface Water (A1)	atic Fauna (B13)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	Deposits (B15) (LRR U)	Drainage Pa	tterns (B10)
Saturation (A3)	rogen Sulfide Odor (C1)	Moss Trim L	ines (B16)
	lized Rhizospheres along Living R	Roots (C3) Dry-Season	Water Table (C2)
	sence of Reduced Iron (C4)	Crayfish Bur	
	ent Iron Reduction in Tilled Soils (	1 K	isible on Aerial Imagery (C9)
	Muck Surface (C7)		Position (D2)
	er (Explain in Remarks)	Shallow Aqu	
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)		FAC-Neutral	noss (D8) (LRR T, U)
Field Observations:		Spriagrium	11055 (D0) (ERR 1, 0)
	Depth (inches):		
	Depth (inches):		
	Depth (inches):	Wetland Hydrology Preser	nt? Yes No
(includes capillary fringe)	THE SHARE AND A THE SHARE AND A SHARE AND		
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspec	tions), if available:	
Remarks:			
Nemars.			

201		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species That Are OBL FACING SEAC: 3
1. Liquidambar styraciflua	40	<u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC: 5 (A)
2. Quercus alba	<u>5</u>	<u>N</u>	<u>FACU</u>	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4.				,
				Percent of Dominant Species That Are ORL FACW or FAC: 75% (A/R)
5				That Are OBL, FACW, or FAC: 75% (A/B)
6				Prevalence Index worksheet:
		= Total Cov		
50% of total cover: 22.5	20% of	ftotal cover	: 9	Total % Cover of: Multiply by:
Sabling Stratum (Plot size: 15' )				OBL species x 1 =
1				FACW species $30$ $x = 60$
				FAC species 80 x 3 = 240
2				FACU species $\underline{5}$ $x = \underline{20}$
3				UPL species x 5 =
4				Column Totals: 115 (A) 320 (B)
5				Column Totals. 110 (A) 1=1 (B)
6				Prevalence Index = B/A = 2.78
	<u></u>	= Total Cov	ег .	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	f total cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15')				✓ 2 - Dominance Test is >50%
1, Lonicera japonica	40	Υ	FAC	
2. Rosa multiflora	30	Y	FACU	3 - Prevalence Index is ≤3.01
			1700	Problematic Hydrophytic Vegetation¹ (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
	70	= Total Cov	er er	
50% of total cover: <u>35</u>				Tree – Woody plants, excluding woody vines,
· · · · · · · · · · · · · · · · · · ·	20% 0	total cover	· <del>· · · · · · · · · · · · · · · · · · </del>	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5'	20	V		( is still of larger in stational at broad realign (22)
1.Bidens frondosa	30	<u>Y</u>	FACVV	Sapling – Woody plants, excluding woody vines,
2				approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				Shrub – Woody plants, excluding woody vines,
5.				approximately 3 to 20 ft (1 to 6 m) in height.
6				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody
7				plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				
10				Woody vine - All woody vines, regardless of height.
11.				
	30	= Total Cov		
500/ -51-1-1 15				
50% of total cover: 15	20% 01	total cover	· <u>0</u>	
Woody Vine Stratum (Plot size: 30'				
1,				
2				
3				
4.				
5				Hydrophytic
		= Total Cov		Vegetation Present? Yes No
50% of total cover:	20% of	ftotal cover		100
Remarks: (If observed, list morphological adaptations belo	w/).			

Sampling Point: WGO-C U

Profile Desc	ription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Features				
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-12</u>	10YR2/2	<u> 100 </u>					SiL	
								_
l <del></del>								
	oncentration, D=De					ains.		PL=Pore Lining, M=Matrix.
I —	Indicators: (Applic	cable to all Li			-			for Problematic Hydric Solis <sup>3</sup> :
Histosol			Polyvalue Be					luck (A9) (LRR O)
_	oipedon (A2)		Thin Dark St				I F	luck (A10) (LRR S)
	stic (A3)		Loamy Muck			O)	1 1	ed Vertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gley		F2)			ont Floodplain Soils (F19) (LRR P, S, T)  lous Bright Loamy Soils (F20)
	d Layers (A5) Bodies (A6) <b>(LRR F</b>	9 T III	Depleted Ma		·6\			(A 153B)
11 1 -	icky Mineral (A7) (L		Depleted Da	•	,		`	arent Material (TF2)
	esence (A8) (LRR I		Redox Depri				1 1	hallow Dark Surface (TF12)
	ick (A9) (LRR P, T)		Marl (F10) (I		-,			Explain in Remarks)
	d Below Dark Surfac		Depleted Oc	-	(MLRA 15	51)		
	ark Surface (A12)	` ,	Iron-Mangan				, T) <sup>3</sup> Indica	ators of hydrophytic vegetation and
Coast P	rairie Redox (A16) (	MLRA 150A)	Umbric Surfa	ace (F13) (	LRR P, T,	U)	wett	and hydrology must be present,
Sandy N	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric	(F17) (ML	RA 151)		unle	ess disturbed or problematic.
Sandy G	Bleyed Matrix (S4)		Reduced Ve					
19 1 -	Redox (S5)		Piedmont Flo	-		-	-	
	l Matrix (S6)		Anomalous I	Bright Loan	ny Soils (F	F20) (MLF	RA 149A, 153C,	153D)
	rface (S7) (LRR P,						T	
Type: No	Layer (if observed)	:						
			_					
Depth (in	ches):		<u> </u>				Hydric Soil	Present? Yes No
Remarks:								

Project/Site: Glassboro to Camden Line	City/County: Glou	ucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT	. 20	State: NJ	Sampling Point: WGO-D W
Investigator(s): DD, AK	Section, Township	o, Range: Glassboro	
Landform (hillslope, terrace, etc.): terrace	Local relief (conca	ve, convex, none): concave	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A L	.at: 39.69478	Long: -75.12134	Datum: NAD 198
Soil Map Unit Name: Berryland and Mullica soils, 0	-3 % slopes, occasiona	Ily flooded NWI classification	ation: N/A
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes	No (If no, explain in Re	emarks.)
5394	28 5.0	Are "Normal Circumstances" p	resent? Yes 🗸 No
Are Vegetation Soil , or Hydrology r	naturally problematic?	(If needed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling poi	nt locations, transects	important features, etc.
Hydrophytic Vegetation Present? Yes ✓ N		8 S S	7)
	is the Sam		
Wetland Hydrology Present? Yes N	within a w	etland? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all t	that apply)	Surface Soil (	Cracks (B6)
✓ Surface Water (A1) Aquatic	Fauna (B13)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2) Marl De	posits (B15) (LRR U)	Drainage Pat	terns (B10)
Saturation (A3)	en Sulfide Odor (C1)	✓ Moss Trim Li	nes (B16)
	d Rhizospheres along Living F		Vater Table (C2)
	ce of Reduced Iron (C4)	Crayfish Burr	
	Iron Reduction in Tilled Soils ( ick Surface (C7)	Geomorphic	sible on Aerial Imagery (C9)
	Explain in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	FAC-Neutral	
Water-Stained Leaves (B9)		Sphagnum m	oss (D8) (LRR T, U)
Field Observations:			-
Surface Water Present? Yes No De	pth (inches): 0-6		
	pth (inches): 6	aded visite assistant with as which	
Saturation Present? Yes  No De (includes capillary fringe)	pth (inches): <u>Surface</u>	Wetland Hydrology Presen	t? Yes No
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspec	tions), if available:	-
Remarks:			
1			9.

20'		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )  1 Acer rubrum	<u>% Cover</u> 50	<u>Species?</u> Y	<u>Status</u> FAC	Number of Dominant Species That Are ORL FACIN & FAC: 5
				That Are OBL, FACW, or FAC: 5 (A)
2. Quercus palustris	30		FACW	Total Number of Dominant
3. Ilex opaca	<u> 20</u>	<u>N</u>	<u>FAC</u>	Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
		= Total Co		
50% of total cover: 50	20% o	f total cover	20	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15' )				OBL species x 1 =
1				FACW species $\frac{90}{80}$ $\times 2 = \frac{180}{240}$
2				FAC species 80 x 3 = 240
3				FACU species x 4 =
4				UPL species x 5 =
5.				Column Totals: (A) (B)
6				Prevalence Index = B/A = 2.47
		= Total Cov	 /er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% o	f total cover		<del></del>
Shrub Stratum (Plot size: 15' )		r total boral	·	1 - Rapid Test for Hydrophytic Vegetation
1, Lindera benzoin	20	Υ	<b>FACW</b>	✓ 2 - Dominance Test is >50%
- Cornus cariosa	20	${Y}$	FACW	✓ 3 - Prevalence Index is ≤3.01
- lloy opens	10	<del></del>	FAC	Problematic Hydrophytic Vegetation' (Explain)
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
		= Total Co		Tree - Woody plants, excluding woody vines,
50% of total cover: <u>25</u>	20% o	f total cover	: 10	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5')		.,	E A O) A /	(7.6 cm) or larger in diameter at breast height (DBH).
1.Osmundastrum cinnamomeum	_ 20	<u> </u>	FACW	Sapling – Woody plants, excluding woody vines,
2				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3				Inali 3 in. (7.6 cm) DBH.
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
8.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9.				, , , =
10				Woody vine - All woody vines, regardless of height.
11.				
	20	= Total Cov		
50% of total cover: 10				
Woody Vine Stratum (Plot size: 30' )	2070 0	i total cover	· <del>· · · · · ·</del>	
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov		Vegetation Present? Yes No
50% of total cover:	20% o	f total cover	·	Tresent res
Remarks: (If observed, list morphological adaptations belo	ow).			

SOIL Sampling Point: WGO-D W

	cription: (Describe	to the depth				or confirm	the absence o	f indicators.)
Depth (inches)	Matrix Color (moist)	- %	Color (moist)	ox Feature: %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-20	10YR2/1	- <del>- 20</del> - 100	Color (moist)		_туре	LOC	SiS	Remarks
0-20	10102/1						313	
				- ——				
	oncentration, D=De					ains.		L=Pore Lining, M=Matrix.
_	indicators: (Applic	cable to all L			-			or Problematic Hydric Solis <sup>3</sup> :
Histoso			Polyvalue B					ck (A9) (LRR O)
$\overline{}$	pípedon (A2)		Thin Dark S				I F	ck (A10) (LRR S)
	istic (A3)		Loamy Muck			O)	1 1	Vertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4) d Layers (A5)		Loamy Gley Depleted Ma		F2)			it Floodplain Soils (F19) (LRR P, S, T) bus Bright Loamy Soils (F20)
	Bodies (A6) (LRR I	2. T. U)	Redox Dark		6)			A 153B)
_	ucky Mineral (A7) (L		Depleted De	,	,			ent Material (TF2)
	resence (A8) (LRR		Redox Depr				1 1	allow Dark Surface (TF12)
	uck (A9) (LRR P, T)		Marl (F10) (I	,	•			xplain in Remarks)
Deplete	d Below Dark Surfa	ce (A11)	Depleted Oc	hric (F11)	(MLRA 1	51)		
	ark Surface (A12)		iron-Mangar		· /·			ors of hydrophytic vegetation and
	rairie Redox (A16) (					, U)		nd hydrology must be present,
I	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric			08 4505)		s disturbed or problematic.
_	Gleyed Matrix (S4) Redox (S5)		Reduced Ve					
9 1 -	teuox (SS) 1 Matrix (S6)			-		-	гэд) IA 149A, 153C, 1	153D)
	rface (S7) (LRR P,	S. T. U)	Anomalous	bright Loar	ny dona (i	20) (INEIX	IA 143A, 1330, 1	1330)
	Layer (if observed)						T	
Type: N			<u></u>					
Depth (in	ches):		<u></u>				Hydric Soil P	resent? Yes No No
Remarks:							1	

Project/Site: Glassboro to Camden Rail Line	City/County: Glou	ucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT		State: NJ	Sampling Point: WGO-D U
Investigator(s): DD, AK	Section, Township	o, Range: Glassboro	
Landform (hillslope, terrace, etc.): terrace		ive, convex, none): none	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	_ Lat: <u>39.6932</u>	Long: -75.12246	Datum: NAD 198
Soil Map Unit Name: Hammonton loamy sand, 0	to 5 percent slopes	NWI classific	cation: N/A
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No (If no, explain in R	lemarks.)
Are Vegetation Soil or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	present? Yes V No
Are Vegetation Soil , or Hydrology	naturally problematic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site ma	p showing sampling poi	nt locations, transects	, important features, etc.
Hydrophytic Vegetation Present?	No V	20 NO NO	Å.
Hydric Soil Present?	No lis the Sam		¬ [
Wetland Hydrology Present?	No within a W	etland? Yes	No
Remarks:	•		
HYDROLOGY			
Wetland Hydrology Indicators:	52505 25 5556	2000 at 10 can up	ators (minimum of two required)
Primary Indicators (minimum of one is required; check a		Surface Soil	Cracks (B6)
	itic Fauna (B13)		getated Concave Surface (B8)
	Deposits (B15) (LRR U)	Drainage Pa	
	ogen Sulfide Odor (C1)	Moss Trim L	
	zed Rhizospheres along Living F ence of Reduced Iron (C4)	Crayfish Bur	Water Table (C2)
	ent Iron Reduction in Tilled Soils (		isible on Aerial Imagery (C9)
	Muck Surface (C7)	7 N	Position (D2)
	r (Explain in Remarks)	Shallow Aqu	
Inundation Visible on Aerial Imagery (B7)	(2) (2	FAC-Neutral	canacian Marcallan
Water-Stained Leaves (B9)		Sphagnum r	noss (D8) (LRR T, U)
Field Observations:			-
Surface Water Present? Yes No	Depth (inches):		
Water Table Present? Yes No I	Depth (inches):		
Saturation Present? Yes No I (includes capillary fringe)	Depth (inches):	Wetland Hydrology Preser	nt? Yes No V
Describe Recorded Data (stream gauge, monitoring we	II, aerial photos, previous inspec	tions), if available:	
Remarks:			

Sampling	Point:	WGO-D	U

201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Liquidambar styraciflua	40	<u>Y</u>	FAC_	That Are OBL, FACW, or FAC: 4 (A)
2.				
				Total Number of Dominant
3				Species Across All Strata:
4,				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 66% (A/B)
6				(113)
	40	= Total Cov		Prevalence Index worksheet:
				Total % Cover of: Multiply by:
50% of total cover: 20	20% of	f total cover:	<del>0</del>	
Sabling Stratum (Plot size: 15' )				
1				FACW species $15$ $x = 30$
				FAC species 95 x 3 = 285
2				FACU species <u>55</u> x 4 = <u>220</u>
3				UPL species x 5 =
4				
5				Column Totals: <u>165</u> (A) <u>535</u> (B)
				2.24
6				Prevalence Index = B/A = 3.24
		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	f total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )				2 - Dominance Test is >50%
1, Cornus sericea	15	Υ	FACW	
	15	Y	FAC	3 - Prevalence Index is ≤3.0¹
2. llex opaca				Problematic Hydrophytic Vegetation¹ (Explain)
3. Kalmia latifolia	10	<u>Y</u>	<u>FACU</u>	
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
5				
6				Definitions of Five Vegetation Strata:
	40	= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: <u>20</u>	20% of	f total cover:	8	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,Smilax rotundifolia	40	Υ	FAC	
				Sapling – Woody plants, excluding woody vines,
2. Poa pratensis	30	<u>Y</u>	<u>FACU</u>	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3. Schizachyrium scoparium	<u>15</u>	<u>N</u>	<u>FACU</u>	
4				Shrub – Woody plants, excluding woody vines,
_				approximately 3 to 20 ft (1 to 6 m) in height.
ō				
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3 ft (1 m) in height.
				a it (1 m) it neight.
9				Woody vine – All woody vines, regardless of height.
10				
11				
	85	= Total Cov	er	
50% of total cover: 42.5	20% a	f total cover:	17	
	20 /0 0	total cover.	<del></del>	
Woody Vine Stratum (Plot size: 30'				
1,				
2				
3.				
4				
5				Hydrophytic
	0	= Total Cov	er	Vegetation
50% of total cover:	20% of	fitotal cover		Present? Yes No
Remarks: (If observed, list morphological adaptations belo	w).			

Sampling Point: WGO-D U

	cription: (Describe	e to the dep	th needed to docum			or confir	n the absence of i	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	<u>x Feature</u> %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	7.5YR3/2	90	7.5YR6/6	10	C	M	SCL SCL	Kemarks
6-18	7.5YR3/2	70	7.5YR6/6	30	- <del>c</del>	M	SCL —	
0-10	7.51 NS/Z		7.01110/0		- —	IVI		
							·	
							·	
			Reduced Matrix, MS			ains.		=Pore Lining, M=Matrix.
I —		cable to all	LRRs, unless other		-			Problematic Hydric Solis <sup>3</sup> :
Histosol			Polyvalue Be				• —	(A9) (LRR O)
_	pipedon (A2) istic (A3)		Thin Dark Su				I F	(A10) (LRR S) /ertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye			. 0,	1 1	Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Mai		,			s Bright Loamy Soils (F20)
1777	Bodies (A6) (LRR		Redox Dark				(MLRA1	•
	ucky Mineral (A7) <b>(L</b> resence (A8) (L <b>RR</b>		Depleted Dar				1 1	it Material (TF2) ow Dark Surface (TF12)
17 1	uck (A9) (LRR P, T)	•	Mari (F10) (L	,	-0)			ow Dark Surface (TFT2)  Ilain in Remarks)
	d Below Dark Surfa		Depleted Oct	-	(MLRA 1	51)		,,
	ark Surface (A12)		Iron-Mangan					s of hydrophytic vegetation and
	rairie Redox (A16)					', U)		hydrology must be present,
1	Mucky Mineral (S1) Gleyed Matrix (S4)	(LKK U, S)	Delta Ochric Reduced Ver			NA 150B		disturbed or problematic.
_	Redox (S5)		Piedmont Flo					
. —	Matrix (S6)		Anomalous B	Bright Loa	ımy Soils (	F20) (MLI	RA 149A, 153C, 153	3D)
	rface (S7) (LRR P,							
Type: N	Layer (if observed One	):						
Depth (in							Hydric Soil Pre	sent? Yes No
Remarks:	Cires)		<u> </u>				Hydric 3011 Fre	Selle TesNO
ixciliarks.								

Project/Site: Glassboro to Camden Rail Line	City/County: Glot	ucester	Sampling Date: 12/31/13
Applicant/Owner: DRPA/NJT	300 3510	State: NJ	Sampling Point: WGO-E W
Investigator(s): DD, AK	Section, Township	, Range: Glassboro	
Landform (hillslope, terrace, etc.): depression	Local relief (conca	ve, convex, none): concave	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): MLRA 149A	_ Lat: <u>39.68984</u>	Long: 75.12318	Datum: NAD 198
Soil Map Unit Name: Urban land-Aura complex,	0 to 5 percent slopes	NWI classification	ation: N/A
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No (If no, explain in Re	emarks.)
Are Vegetation Soil or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	resent? Yes 🗸 No
Are Vegetation Soil or Hydrology	naturally problematic?	(If needed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing sampling poi	nt locations, transects	, important features, etc.
Hudrachutta Vasatatian Bassanta Vas	Na C	4 0 0	3.
Hydrophytic Vegetation Present? Yes ✓ Hydric Soil Present? Yes ✓	No Is the Sam		I
Wetland Hydrology Present?	No within a W	etland? Yes	No
Remarks:			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil (	Cracks (B6)
Surface Water (A1)	tic Fauna (B13)	Sparsely Veg	etated Concave Surface (B8)
✓ High Water Table (A2) Marl	Deposits (B15) (LRR U)	Drainage Pat	terns (B10)
Saturation (A3)	ogen Sulfide Odor (C1)	Moss Trim Li	nes (B16)
	zed Rhizospheres along Living R	Roots (C3) Dry-Season \	Water Table (C2)
	ence of Reduced Iron (C4)	Crayfish Burr	ows (C8)
	nt Iron Reduction in Tilled Soils (	1 D	sible on Aerial Imagery (C9)
	Muck Surface (C7)	Geomorphic	and the second s
	r (Explain in Remarks)	Shallow Aqui	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	. 5 5 4 <b>3 1</b> 1 <b>3 1</b> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Water-Stained Leaves (B9) Field Observations:	7	Spriagrium	oss (D8) <b>(LRR T, U)</b>
	Depth (inches): 1-2		
	Depth (inches): 1-2		
	Depth (inches): 1-2	Wetland Hydrology Presen	t? Yes 🗸 No
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring we	II, aerial photos, previous inspec	tions), if available:	
Remarks:			
Remarks.			

0.01	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30'		Species?		Number of Dominant Species
1. Acer negundo	5	<u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC: 4
2. Acer rubrum	5	Υ	FAC	
3.				Total Number of Dominant Species Across All Strata:  5 (B)
				Species Acioss Air Sirata(b)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 80% (A/B)
6				Describer a landau conducto esta
	10	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 5	20% of	f total cover	2	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 15' )				OBL species 20 x 1 = 20
				FACW species $40$ $x 2 = 80$
1				FAC species 40 x 3 = 120
2				FACU species x 4 =
3				UPL species $\frac{25}{x5} = \frac{125}{x}$
4				
5				Column Totals: <u>125</u> (A) <u>345</u> (B)
6.				Prevalence Index = B/A = 2.76
	$\overline{}$	= Total Cov		
<b>500</b> ( attack) and an				Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	rtotal cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 15' )	00		LIDI	✓ 2 - Dominance Test is >50%
1. Rubus allegheniensis	20	<u>Y</u>	UPL	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				Problematic Hydrophytic Vegetation¹ (Explain)
3				Tropionidas Trycrophysis Vogetanon (Explain)
				1
4				Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6	20			Definitions of Five Vegetation Strata:
		= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: 10	20% of	ftotal cover	: <u>4                                    </u>	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5'				(7.6 cm) or larger in diameter at breast height (DBH).
1.Phragmites australis	40	Υ	<b>FACW</b>	Sapling – Woody plants, excluding woody vines,
2 Juncus effusus	20	<u>Y</u>	OBL	approximately 20 ft (6 m) or more in height and less
3. Apocynum androsaemifolium	5	$\frac{}{N}$	UPL	than 3 in. (7.6 cm) DBH.
			<u> </u>	
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximately 5 to 20 it (1 to 6 iii) iii fleight.
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
8.				plants, except woody vines, less than approximately 3 ft (1 m) in height.
				Sic (Till) il Height.
9				Woody vine - All woody vines, regardless of height.
10				
11				
	<u>65</u>	= Total Cov	er	
50% of total cover: <u>32.5</u>	20% of	ftotal cover	: 13	
Woody Vine Stratum (Plot size: 30')				
1, Lonicera japonica	30	Υ	FAC	
2				
3				
4				
5				Hydrophytic
	30	= Total Cov	er	Vegetation
50% of total cover: 15	20% of	ftotal cover	6	Present? Yes ₩ No No
Remarks: (If observed, list morphological adaptations belo				
i izemains. (ii observau, list morphological adaptations belo	₩ ).			

Sampling Point: WGO-E W

Profile Desc	cription: (Describe	e to the depth	needed to docui	nent the i	ndicator	or confirm	n the absence of	indicators.)
Depth	Matrix			x Features				
(inches)	Color (moist)	_ <u>%</u> _	Color (moist)	. <u> </u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR3/1	_ <u>100</u>					SiS	
12+	10YR5/1	_ <u>100</u>					SiS	
								_
	oncentration, D=De					ains.		L=Pore Lining, M=Matrix.
I —	Indicators: (Appli	cable to all L			-			r Problematic Hydric Solis <sup>3</sup> :
Histosol			Polyvalue Be					ck (A9) (LRR O)
_	pipedon (A2)		Thin Dark Su					ck (A10) (LRR S)
	istic (A3) en Sulfide (A4)		Loamy Muck			0)	1 1	Vertic (F18) (outside MLRA 150A,B) Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)		Depleted Ma		· 2)			us Bright Loamy Soils (F20)
	Bodies (A6) (LRR	P. T. U)	Redox Dark		6)		(MLRA	
177	ucky Mineral (A7) (L		Depleted Da					ent Material (TF2)
Muck Pr	esence (A8) (LRR	U)	Redox Depre				1 1	llow Dark Surface (TF12)
	uck (A9) (LRR P, T)		Marl (F10) (L	-			Other (Ex	plain in Remarks)
	d Below Dark Surfa	ce (A11)	Depleted Oc		•		_ 3	
	ark Surface (A12) rairie Redox (A16) i	(MILDA 450A)	Iron-Mangan Umbric Surfa					ors of hydrophytic vegetation and id hydrology must be present,
	Aucky Mineral (S1)		Delta Ochric			U)		s disturbed or problematic.
I I T	Sleyed Matrix (S4)	(21111 0, 0)	Reduced Ve			0A, 150B)		alstaleda a prozionialis.
_	Redox (S5)		Piedmont Flo					
	l Matrix (S6)		Anomalous I	Bright Loar	ny Soils (F	20) (MLF	RA 149A, 153C, 1	53D)
	rface (S7) (LRR P,							
Restrictive	Layer (if observed	):						
, , <u> </u>							1	
Depth (in	ches):		<del></del>				Hydric Soil Pr	esent? Yes  No No
Remarks:								

**Appendix 2-C: Photographs** 



Photo 1: Wetland WGC-C/WCC-A at Newton Creek looking north (September 2013).

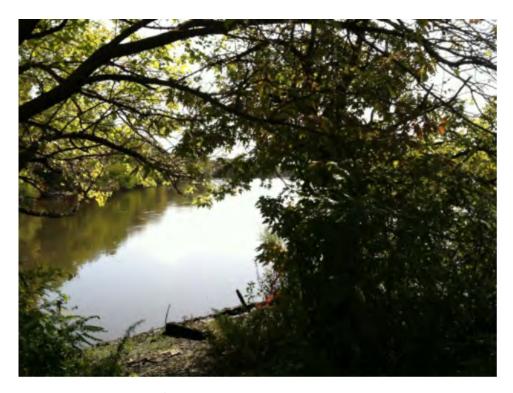


Photo 2: Wetland WGC-C/WCC-A at Newton Creek looking south (September 2013).



Photo 3: Drainage ditch WCC-B looking north (September 2013).



Photo 4: Wetland WGC-A/WBL-C at Little Timber Creek looking south (September 2013).



Photo 5: Wetland WGC-A/WBL-C at Little Timber Creek looking east (September 2013).



Photo 6: Wetland WGC-B looking northwest (September 2013).



Photo 7: Wetland WWV-A/WBL-A looking east towards Big Timber Creek (September 2013).



Photo 8: Wetland WWV-A/WBL-A looking east at Big Timber Creek (September 2013).



Photo 9: Wetland WWB-B looking northeast (November 2013).



Photo 10: Wetland WBL-B looking west (September 2013).



Photo 11: Wetland WDP-D looking southeast (September 2013).



Photo 12: Wetland WWY-A looking southeast at Hunter Street Lake/Woodbury Creek (September 2013).



Photo 13: Wetland WWH-A looking south from an existing walking path (September 2013).



Photo 14: Wetland WWH-A extends into the VMF #10 site (October 2013).



Photo 15: Drainage ditch WWH-B looking west (September 2013).



Photo 16: Drainage ditch WWH-B looking south (September 2013).



Photo 17: Wetland WDP-A looking north along a tributary of Mantua Creek (September 2013).



Photo 18: Wetland WDP-A looking northeast at a tributary of Mantua Creek (September 2013).



Photo 19: Wetland WDP-B looking southeast (September 2013).



Photo 20: Wetland WDP-B looking west (September 2013).



Photo 21: Wetland WDP-C looking east at Marlton Lake (September 2013).



Photo 22: Wetland WDP-C looking east at northern wetland fringe at Marlton Lake (September 2013).



Photo 23: Wetland WDP-C looking west at southern wetland fringe at Marlton Lake (September 2013).



Photo 24: Wetland WWN-C looking east (August 2013).



Photo 25: Wetland WMT-G/WWN-A at Mantua Creek (August 2013).



Photo 26: Wetland WMT-G/WWN-A (Mantua Creek) looking west (August 2013).



Photo 27: Wetland WWN-B looking west at Monongahela Brook (August 2013).



Photo 28: Wetland WWN-B looking west at culvert crossing carrying Monongahela Brook (August 2013).



Photo 29: Drainage ditch WMT-E at Surrey Road, looking southwest (August 2013).



Photo 30: Wetland WMT-F looking north at a tributary of Chestnut Branch (August 2013).



Photo 31: Wetland WMT-F looking south along a tributary of Chestnut Branch (August 2013).



Photo 32: Wetland WMT-A looking west (August 2013).



Photo 33: Wetland WMT-B looking east (August 2013).



Photo 34: Wetland WMT-C looking east (August 2013).



Photo 35: Wetland WMT-D looking south (August 2013).



Photo 36: Wetland WPT-C looking southwest (August 2013).



Photo 37: Wetland WPT-C looking north (August 2013).



Photo 38: Wetland WPT-D looking south (December 2013).



Photo 39: Wetland WPT-D looking west (December 2013).



Photo 40: Wetland WPT-A looking northwest (August 2013).



Photo 41: Wetland WPT-B looking northeast at Glen Lake (August 2013).



Photo 42: Wetland WGO-A looking east towards culvert in Chestnut Branch (August 2013).



Photo 43: Wetland WGO-A looking west towards culvert in Chestnut Branch (August 2013).



Photo 44: Drainage ditch WGO-B looking south (August 2013).



Photo 45: Wetland WGO-C and associated drainage ditch at VMF 4a, looking south (December 2013).



Photo 46: Wetland WGO-C at VMF 4a looking south (December 2013).



Photo 47: Wetland WGO-D at VMF 4a looking north (December 2013).



Photo 48: Wetland WGO-E at VMF 4a looking west (December 2013).