STATE OF CONNECTICUT SITING COUNCIL

Eversource Energy Application For A Certificate Of Environmental Compatibility And Public Need For The Construction, Maintenance, And Operation Of A 115-Kilovolt (kV) Bulk Substation Located At 290 Railroad Avenue, Greenwich, Connecticut, And Two 115-kV Transmission Circuits Extending Between The Proposed Substation and The Existing Cos Cob Substation, Greenwich, Connecticut, and Related Substation Improvements

DOCKET NO. 461A

May 5, 2017

PETITION OF EVERSOURCE ENERGY FOR RECONSIDERATION OF THE DENIAL OF A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR

THE GREENWICH SUBSTATION AND LINE PROJECT

VOLUME 2

APPENDICES

Submitted by: The Connecticut Light and Power Company doing business as Eversource Energy Note: This page left intentionally blank

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Hybrid Transmission Line Component of Modified Greenwich Substation and Line Project

WETLAND AND WATERCOURSE REPORT

Prepared for:

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1.0 Introduction

The Connecticut Light and Power Company, d/b/a Eversource Energy ("Eversource"), proposes the Modified Greenwich Substation and Line Project, which includes a hybrid underground / overhead double circuit transmission line between the existing Cos Cob Substation and a proposed new Greenwich Substation to be located near the corner of Railroad Avenue and Field Point Road in Greenwich, Connecticut. In this report, this proposed hybrid transmission line is referred to as the "Project." It consists of the installation of two new transmission circuits in an overhead segment in which they will be supported by approximately 19 new overhead double circuit structures (aboveground line) and two underground segments, one connecting the overhead segment to the existing Cos Cob Substation and the other connecting the overhead segment to a proposed new Greenwich substation.

The new overhead transmission line will extend west from the Cos Cob Substation property to Steamboat Road, within the Metro North Railroad ("MNRR") Right-of-Way ("ROW"). At that point, the transmission line will transition to underground and extend north to Greenwich Avenue and west to the proposed new substation site at 290 Railroad Avenue.

This report provides a summary of wetland and watercourse inventories and field delineations conducted by AECOM within the Project area. Specifically, this report discusses applicable federal and state wetland and watercourse regulations, the methodologies used to identify the wetland and watercourse resources encountered along the Project and summarizes the findings of the surveys. These field delineations were conducted to identify both federal and State of Connecticut jurisdictional water resources.

Tables listing all wetlands and watercourses identified during the course of the surveys are located in Appendix A. Appendix B contains the wetland and watercourse mapping associated with the Project. Representative wetland and watercourse photographs are located in Appendix C. Wetland transect data forms are included in Appendix D.

1.1 Physiographic Region and Geologic Overview

The Project area is situated within the Coastal Plain physiographic region within the Southwest Coast Drainage Basin of Connecticut¹. The Coastal Plain forms a narrow band in the southern portion of the state, along Long Island Sound. Extending up to fifteen miles inland, this physiographic region is characterized by rocky headlands, pocket beaches, coves, and islands, as well as a variety of soils including those developed in glacial outwash and till. The sand and gravel deposited in the Coastal Plain were created by glacial erosion and outwash from underlying bedrock. Soil types are strongly influenced by local bedrock geology.

Bedrock geology mapping indicates the Project area traverses areas predominantly composed of gneiss and schist. As with all of New England, the landscape of Connecticut, including the Coastal Plain was heavily shaped by the late Wisconsinan glaciation episode from the Laurentide ice sheet and the associated outwash meltwaters. It is these glacial influences which resulted in the topography and surficial geology observed within the region today.

¹ Connecticut Geologic Survey Department of Energy and Environmental Protection. 1990, revised 2013.

2.0 Wetland and Watercourse Regulations

In Connecticut, wetlands and watercourses are subject to state and/or federal jurisdiction based upon the federal Clean Water Act ("CWA"; 33 USC 1251 *et seq.*), the Connecticut Inland Wetland and Watercourses Act ("IWWA"; CGS Section 22a-36 through 45) and implementing regulations (RCSA Section 22a-39-1 to 22a-39-15), and the Connecticut Tidal Wetlands Act ("TWA"; CGS Section 22a-28 through 35a) and implementing regulations (RCSA Section 22a-28 through 35a) and implementing regulations (RCSA Section 22a-30-1 to 22a-30-17). The following wetland and watercourse regulations are applicable to the Project.

2.1 Section 404 – Clean Water Act

Wetlands, springs, and other waters of the United States are regulated under Section 404 of the CWA (33 USC 1344) by the United States Army Corps of Engineers ("Corps"). Federal jurisdictional "waters of the United States" include:

- 1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- 2. All interstate waters including interstate wetlands;
- 3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
- 4. All impoundments of waters otherwise defined as waters of the United States under the definition;
- 5. Tributaries of waters identified in paragraphs (1)-(4) above;
- 6. The territorial seas;
- 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) above.

According to the 1987 Corps of Engineers Wetland Delineation Manual² ("Corps Manual"), areas must exhibit three distinct characteristics to be considered wetlands jurisdictional under Section 404 of the CWA:

1. Hydrophytic Vegetation: Plants growing in water or in a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content;

² Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

- 2. Hydric Soils: Soils that, in an undrained condition, are saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation; and,
- 3. Wetland Hydrology: Inundation or saturation by surface or groundwater at a frequency and duration during the growing season sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

In January 2012, the USACE issued a *Regional Supplement to the Corps of Engineers Delineation Manual*[§] ("Regional Supplement"), which provides further guidance for wetland delineations in the northeastern United States. The Regional Supplement provides wetland indicators, delineation guidance, and other information specific to the Northcentral and Northeast Regions, supplementing the 1987 USACE Manual. Indicators and procedures in the Regional Supplement are designed to identify wetlands as defined jointly by the USACE (33 CFR 328.2) and the U.S. Environmental Protection Agency (40 CFR 230.3) and subject to regulation under Section 404 of the CWA.

2.2 Connecticut Inland Wetland and Watercourses Act

The State of Connecticut Department of Energy and Environmental Protection ("DEEP") regulates work in and around inland wetlands under the IWWA (CGS Section 22a-36 through 45) and implementing regulations (RCSA Section 22a-39-1 to 22a-39-15). Typically, the state statute is implemented through the Inland Wetlands and Watercourse Regulations as administered by individual municipalities.

Under Section 2 of the IWWA, a wetland is defined as "land, including submerged land...which consists of poorly drained, very poorly drained, alluvial and floodplain soils as defined by the National Cooperative Soils Survey. Such areas may include filled, graded or excavated sites which possess an aquic (saturated) moisture regime as defined by the United States Department of Agriculture ("USDA") Cooperative Soil Survey."

Watercourses are defined in the IWWA as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof." Under Connecticut law, vernal pools, which contain a specific ecology, are one type of vernal watercourse. Additionally, the IWWA defines Intermittent Watercourses as having a defined permanent channel bed and bank and the occurrence of two of the following: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration of longer than a particular storm incident, or C) the presence of hydrophytic vegetation. Any intermittent watercourses that lack one or more of the above criteria or only exhibit ephemeral flow as result of storm incidents would be considered non-jurisdictional ditches.

2.3 Tidal Wetlands Act

The DEEP has direct regulatory jurisdiction over activities occurring in tidal wetlands and/or waterward of the high tide line. If any construction activities or structure(s), in part or in whole, or any incidental work proposed in conjunction with the construction of structure(s) is proposed at

³ U.S. Army Corps of Engineers. 2011a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0),* ed. J.S. Wakeley, R.W. Lichvar, C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

or waterward of the high tide line, authorization from the DEEP's Land and Water Resources Division would be required prior to construction in accordance with the Tidal Wetlands Act (CGS sections 22a-28 through 22a-35) and/or the statutes governing the placement of structures, dredging, and fill in tidal, coastal or navigable waters (CGS sections 22a-359 through 22a-363f, inclusive).

Tidal wetlands are "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marshes, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all, of [a list of specific plant species - see Connecticut General Statutes (CGS) section 22a-29(2)]" [CGS section 22a-29, as referenced by CGS section 22a-93(7)(E)]. In general, tidal wetlands form in "low energy" environments protected from direct wave action. Low marsh areas are flooded by tidal waters twice a day, while high marsh areas are flooded a few times a month. All tidal wetlands support a diverse ecosystem of vegetation and wildlife.

3.0 Wetland and Watercourse Delineation Procedures

On behalf of Eversource, AECOM conducted wetland and watercourse identification and delineations along the Project corridor on November 8 and 9, 2016 to determine state and federal wetland boundaries in accordance with applicable state and federal regulations. The methods of investigation and procedures used include pre-survey desktop investigations and on-site field surveys to determine the wetland and watercourse resource areas within the Project area.

3.1 **Pre-survey Desktop Investigations**

Prior to the commencement of field surveys, AECOM reviewed information from multiple sources to determine the potential extent of state and federal wetlands within the Project area. Pre-survey information reviewed included:

- United States Geological Survey ("USGS") 7.5-minute topographical quadrangles;
- USGS National Hydrography Dataset ("NHD");
- National Wetlands Inventory ("NWI") map data;
- Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") data;
- U.S. Department of Agriculture Natural Resource Conservation Service ("NRCS") web soil surveys; and,
- CT DEEP inland wetland soils mapping.

3.2 Field Surveys

The wetland delineation methodologies outlined in the Corps Manual and the Regional Supplement and definitions included in the IWWA were used in conjunction with NRCS soil surveys to identify and delineate wetlands along Project area. During the process of delineating wetlands within the Project corridor, both state and federal methodologies were employed and state and federal wetland criteria were evaluated. In order to meet federal jurisdictional wetland status, wetlands must meet the hydric soil, hydrophytic vegetation, and wetland hydrology criteria per the Corps Manual and Regional Supplement. Connecticut-only jurisdictional wetlands consist of areas of poorly drained, very poorly drained, alluvial, and floodplain soils.

Field surveys were initiated with an inspection of the Project corridor to identify soil types, topographic and drainage features, and plant associations that would indicate the potential presence of jurisdictional wetlands. Soil profiles were sampled using a Dutch auger to determine if any alluvial, floodplain, poorly drained, very poorly drained or hydric soil indicators were present. The indicator status of dominant plant species in each vegetation layer stratum was evaluated in the field to determine whether a hydrophytic plant association was present. Indicators of wetland hydrology were also observed and recorded. Specific methods for characterizing and evaluating the soil, vegetation, and hydrologic indicators are described below.

3.2.1 Soils

At the center of each wetland data plot, AECOM observed and documented the soil profile morphology to classify the soil type and depth to evidence of aquic conditions. Typically, a soil

pit was dug to 20 inches with a Dutch auger or to refusal to provide a soil profile for examination. The information collected for each soil profile included soil horizons, depth, texture, color, and the presence or absence of redoximorphic features (mottles and other features). Colors of the soil matrix and mottles were identified using Munsell Soil Color Charts. AECOM based all hydric soil determinations on criteria established in the Corps Manual, Regional Supplement, and *Field Indicators for Identifying Hydric Soils in New England* (NEIWPCC 2004). Additionally, AECOM noted the presence of any saturation and/or standing water encountered during the soil profile description.

3.2.2 Vegetation

Species abundance in both upland and wetland communities was visually estimated. Dominant trees and shrubs/saplings were recorded within a 30-foot and 15-foot radius, respectively, from the center of each documentation plot. Woody vines were recorded within a 30-foot radius plot. Dominant herbaceous vegetation was recorded within a 5-foot radius plot. AECOM identified plant species using appropriate botanical reference material for the region. The hydrophytic indicator status of each species was identified using *The National Plant List: 2016 Wetland Ratings*⁴ (Lichvar et al. 2016).

3.2.3 Hydrology

The term wetland hydrology encompasses all hydrologic characteristics for areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Site hydrology was evaluated during field surveys by initially observing whether the soil at the surface was inundated or saturated. If the ground surface was dry, the depth to freestanding groundwater or saturated soil was measured, and the presence or absence of other indicators of wetland hydrology (e.g., drift lines, water-stained leaves, etc.) was noted. The wetland hydrology criterion was met if one or more primary or two or more secondary field indicators were present.

3.2.4 Wetland and Watercourse Boundary Flagging

For the purposes of documenting and organizing the wetland and watercourse information on maps and tables for this Project, each wetland and watercourse was assigned a unique alphanumeric code. Wetlands were labeled with a "GW" prefix (i.e., Greenwich Wetland) and watercourses were labeled with a "WC" prefix (i.e., Water Course). Tables 1 and 2 (Attachment A) list the delineated wetlands and watercourses identified within the Project area, respectively.

During the field investigations, the boundaries of each resource were identified by sequentiallynumbered vinyl surveyor's flagging tape tied to vegetation and spaced at regular intervals. Wetland/upland boundaries were flagged with pink ribbon and watercourses were flagged with blue ribbon. Watercourses less than ten feet wide were field-identified with a single series of flags established along the centerline of the stream. In instances where the watercourse was greater than ten feet wide, the ordinary high water mark ("OHWM") boundary on each bank was flagged.

3.2.5 Global Positioning System Mapping

All wetland boundary flags, wetland/upland data plots, and watercourse centerline or OHWM boundary flags were located using a hand-held Trimble® Global Positioning System ("GPS")

⁴ Lichvar, R.W., D.L. Banks, W.N.Kirchner, and N.C. Melvin. 2016. The National Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. <u>http://wetland_plants.usace.army.mil/</u>

unit. Where possible, a minimum of 30 static measurements with a positional dilution of precision ("PDOP") of 6.0 were collected at each survey point to obtain sub-meter accuracy. Real time positions were then post-processed for additional accuracy using static data available at public continuously operating reference stations ("CORS") and referenced to the Connecticut State Plane Coordinate System North American Datum ("NAD") 83.

3.3 Wetland Classification

While in the field, AECOM soil and wetland scientists classified the various wetlands and watercourses according to the "Cowardin system", which is a process discussed in *Classification of Wetlands and Deepwater Habitats of the United States*⁵. Identified wetlands were classified as Palustrine Forested ("PFO"), Palustrine Scrub-Shrub ("PSS"), or Palustrine Emergent ("PEM"), all of which are further described below. In some cases, a wetland complex contained more than one wetland classification type. In those situations, each wetland type is listed and the first classification type represents the more dominant characteristic. Wetland vegetation found in these community types within the Project area are described in Section 4.0.

3.3.1 Palustrine Forested Wetlands

Palustrine forested wetlands are characterized by woody vegetation that is six meters (approximately 20 feet) tall or taller. These areas normally contain an overstory of trees, an understory of saplings and/or shrubs, and an herbaceous layer.

3.3.2 Palustrine Scrub-Shrub Wetlands

Palustrine scrub-shrub wetlands are typically dominated by woody vegetation less than six meters (approximately 20 feet) tall. Areas classified as scrub-shrub cover types may represent a successional stage that through natural processes would transition to a forested wetland; or may contain trees or shrubs that are small and/or stunted due to environmental conditions, such as prolonged saturation and/or inundation.

3.3.3 Palustrine Emergent Wetlands

Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes not including mosses and lichens. These wetlands maintain the same appearance year after year and are typically dominated by perennial plants that are present for the majority of the growing season. The plant community within PEM wetlands may also contain a significant component of annual plants.

3.4 Watercourses

According to the IWWA, "Rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof" are considered watercourses. The "top of bank", or OHWM, was used to demarcate the limits of a watercourse. Watercourses were investigated to determine if they are listed as a National Wild and Scenic River under the National Wild and Scenic Rivers Act (16 USC §§ 1271-1287) or rivers designated by the CT DEEP Protected Rivers Act (CGS §§ 25-200 through 25-210). Water quality designations were determined using CT DEEP mapping resources.

⁵ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service Biological Report 79/31. Washington, D.C.

3.5 Post-Survey Desktop Analysis

The wetland and watercourse boundaries were plotted on aerial imagery and subsequently reviewed and confirmed by AECOM field personnel. The aerial-based maps show the locations of the delineated resources relative to the proposed limits of the Project.

4.0 Results

A total of four (4) wetlands, three (3) watercourses and one non-jurisdictional ditch (which receives storm water from Interstate 95 ["I-95"] and the MNRR), were identified within and along the proposed Project corridor. These areas are proximal to proposed Project activities, as shown on mapping presented in Appendix B. A summary of the wetlands and watercourses are presented in Tables 1 and 2, respectively, in Appendix A.

The landscape in and adjacent to the proposed Project corridor is heavily developed, with I-95, the MNRR, and residential and commercial development strongly influencing the character of the area. Virtually all soils observed in both upland and wetland locations were heavily disturbed and very few areas showed any organized, relatively undisturbed soil profiles. In addition, plant communities observed exhibited strong components of invasive species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), Japanese honeysuckle (*Lonicera japonica*), other honeysuckles (*Lonicera spp.*), multiflora rose (*Rosa multiflora*), tree of heaven (*Ailanthus altissima*), Japanese knotweed (*Polygonum cuspidatum*), garlic mustard (*Alliaria petiolata*), and black locust (*Robinia psuedoacacia*).

Significant historic disturbance within the Project corridor has heavily altered the topography and hydrology of the area, which in turn has influenced the extant plant communities. Some small isolated wetlands occurring in the corridor are also heavily shaded by adjacent upland trees, resulting in sparsely vegetated wetlands, with low plant diversity.

4.1 Wetlands

4.1.1 Wetland Vegetation

Palustrine emergent wetlands and other low lying areas within the Project corridor are frequently dominated by Japanese knotweed and common reed. Other herbaceous plant species observed within emergent wetlands include purple loosestrife, sensitive fern (*Onoclea sensibilis*), reed canary grass (*Phalaris arundinacea*), soft rush (*Juncus effusus*), spotted jewelweed (*Impatiens capensis*), common beggarticks (*Bidens frondosa*), poison ivy (*Toxicodendron radicans*) and smartweeds (*Polygonum spp.*). In addition to the PEM vegetation noted above, common dominant woody species observed within PSS wetlands include multiflora rose and common elderberry (*Sambucus nigra*).

Palustrine forest wetland vegetation included the PEM and PSS vegetation identified above. In addition, the overstory of these PFO communities exhibited trees such as red maple (*Acer rubrum*), Eastern cottonwood (*Populus deltoides*), American sweet gum (*Liquidambar styraciflua*) and Norway maple (*Acer platanoides*).

4.1.2 Wetland Soils

The soil types in the various wetlands were identified as disturbed, poorly drained to very poorly drained, mineral soils with varying amounts of organic matter and variable texture. AECOM did not document the presence of any excessively-drained, well-drained, moderately well-drained, or somewhat poorly-drained alluvial or floodplain soils; therefore, state and federal wetland boundaries coincide for all delineated wetlands encountered within the Project area.

All areas delineated as wetland consisted of disturbed poorly-drained and/or very poorly drained soils that exhibited various field indicators for classification as hydric soils. Some areas had a predominance of hydrophytic vegetation, and all areas exhibited indicators of hydrology.

4.1.3 Wetland Hydrology

Most of the wetlands encountered within the Project area are classified as having a seasonally flooded or seasonally saturated water regime. Wetland hydrology indicators were observed in each wetland area. Primary hydrology indicators observed included surface water/inundation, high water table, saturated soils, water marks on vegetation, water stained leaves, and oxidized rhizospheres on living roots. Common secondary indicators observed include drainage patterns in wetlands, geomorphic position, and micro-topographical relief.

4.2 Watercourses

A total of three (3) watercourses were identified within the Project area, and are included in the watercourse summary table (Table 2) in Appendix A.

No watercourses along the Project fall under the jurisdiction of the National Wild and Scenic Rivers Act or are designated as wild and scenic under the CT DEEP Protected Rivers Act.

Appendix A Wetland and Watercourse Summary Tables

Table 1 – Summary of Wetlands Delineated along the Hybrid Transmission Line Table 2 – Summary of Watercourses Delineated along the Hybrid Transmission Line

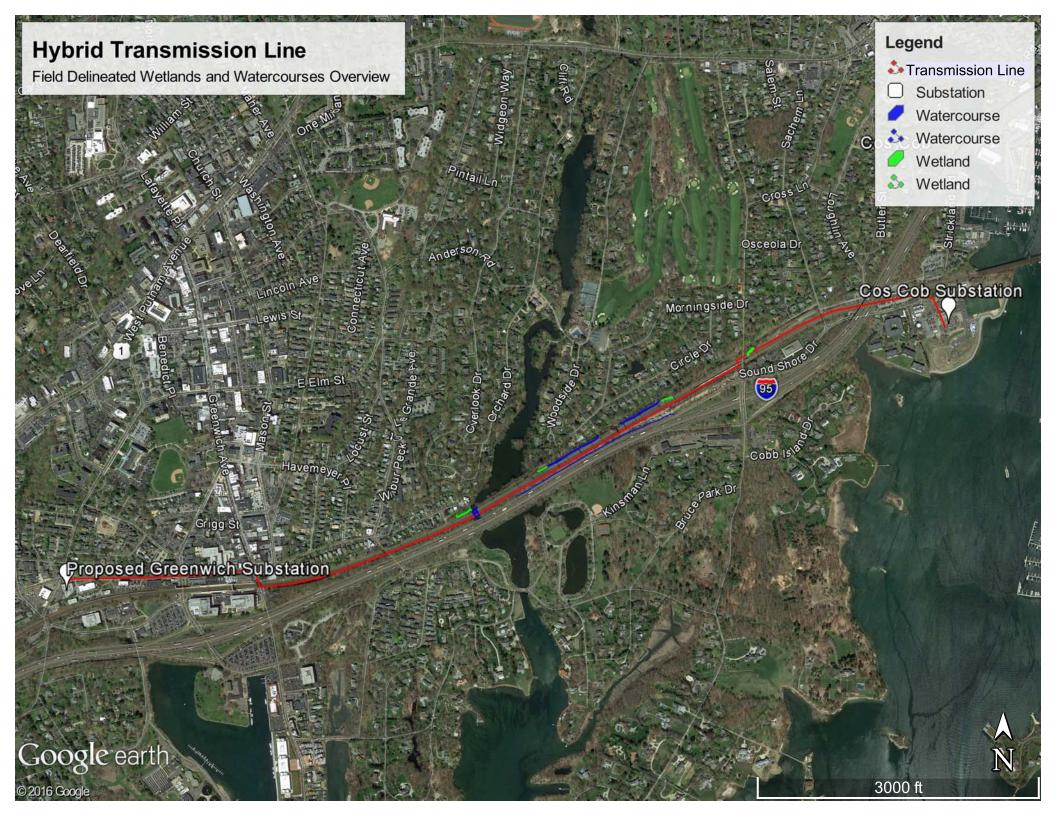
Wetland ID	Map Sheet	Wetland Type	Potential Vernal Pool	Associated Watercourse	General Description
GW-1	2	PSS/PEM	No	None	Small, isolated wetland. Federal jurisdiction unlikely.
GW-2	3	PEM/PSS	No	None	Small, isolated wetland. Adjacent but not connected to Watercourse 1. Federal jurisdiction unlikely.
GW-3	4	PEM/PSS	Unlikely	WC-2	Large areas of un-vegetated wetland soils indicate extended hydroperiod. While unlikely the area may function as vernal pool habitat and/or amphibian breeding habitat.
GW-4	5	PFO	No	WC-3	This PFO discharges to WC-3, which is Greenwich Creek.

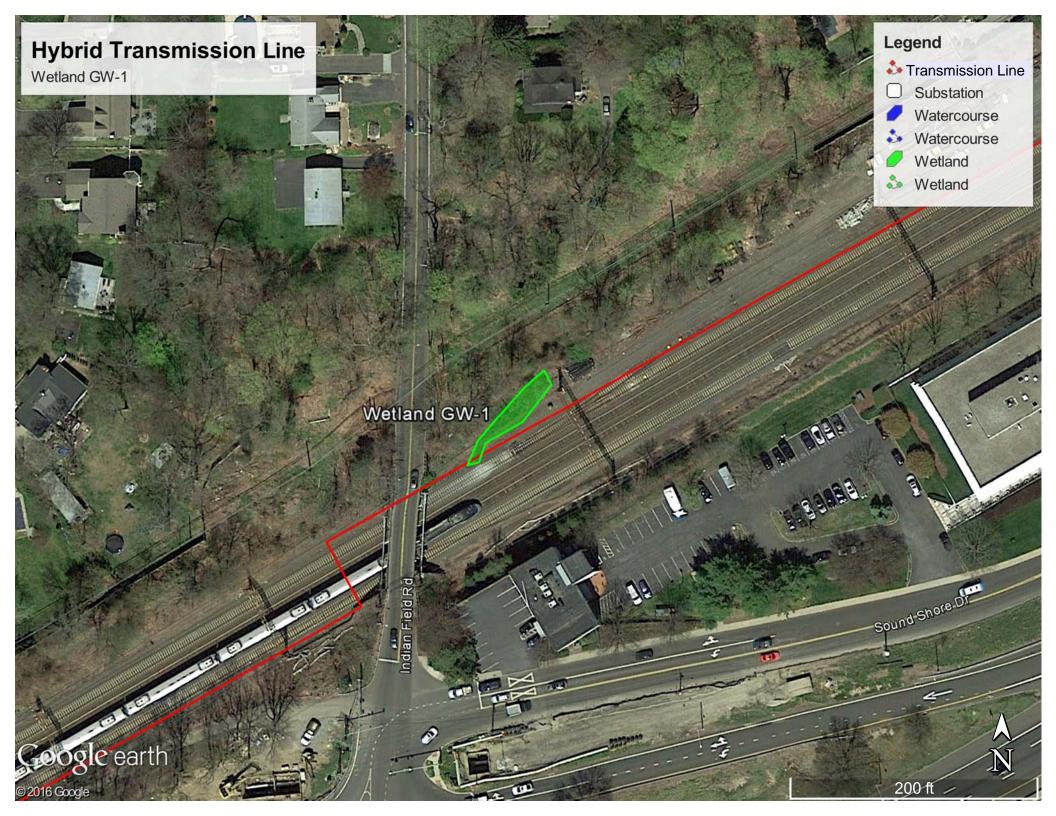
 Table 1. Summary of Wetlands along the Hybrid Transmission Line.

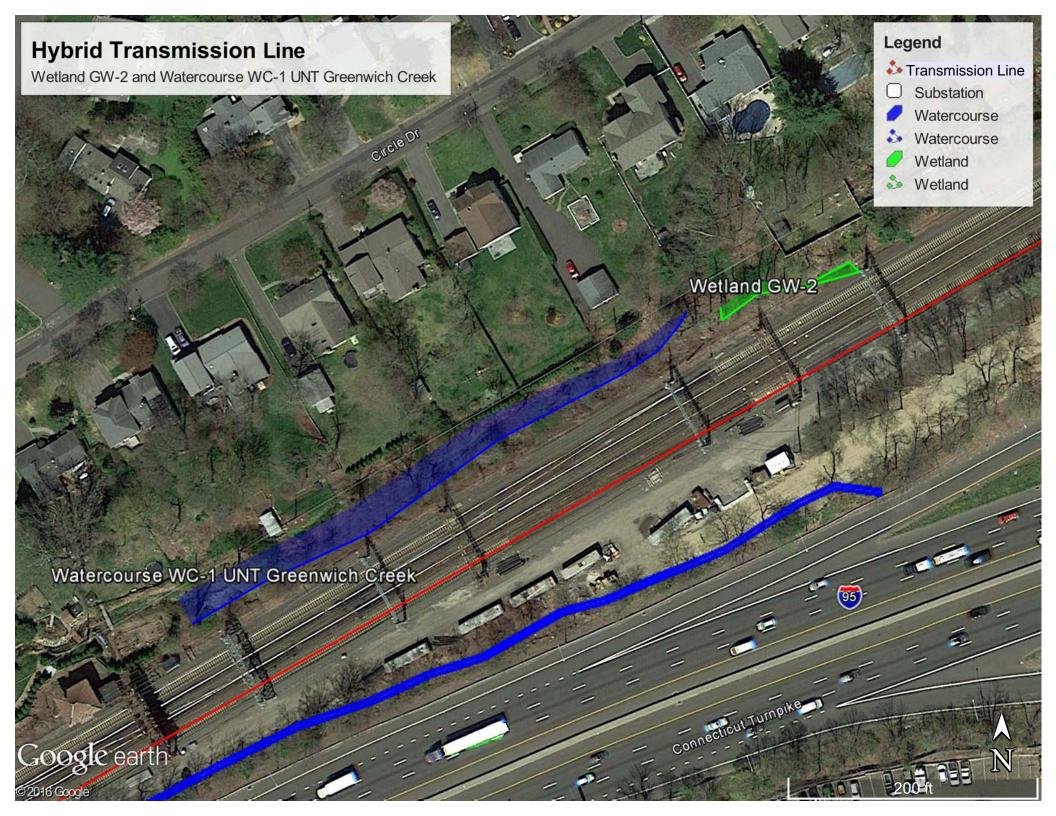
Watercourse ID	Map Sheet	Watercourse Name	Flow Regime	CT DEEP Water Quality Designation ¹	Associated Wetland
WC-1	3	Unnamed Tributary to Greenwich Creek	Intermittent	SA	None
WC-2	4	Unnamed Tributary to Greenwich Creek	Intermittent	SA	GW-3
WC-3	5	Greenwich Creek	Perennial	SA	GW-4

 CT DEEP Water Quality Standards set under RCSA Section 22a-426-1 to 22a-426-9, inclusive. Class SA waters are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation.

Appendix B Project Mapping







Hybrid Transmission Line

Wetland GW-3 and Watercourse WC-2 UNT Greenwich Creek

Legend

200 ft

Transmission Line
 Substation
 Watercourse
 Watercourse
 Wetland
 Wetland

Watercourse WC-2 UNT Greenwich Creek

Drive

Non-Juridictional Ditch

95

Wetland GW-3



© 2016 Good

Hybrid Transmission Line

Wetland GW-4 and Watercourse WC-3 Greenwich Creek

Legend

Transmission Line
 Substation
 Watercourse
 Watercourse
 Wetland
 Wetland

Wetland GW-4

- Connecticut.mm

RET

Watercourse WC-3 Greenwich Creek

95



© 2016 Google

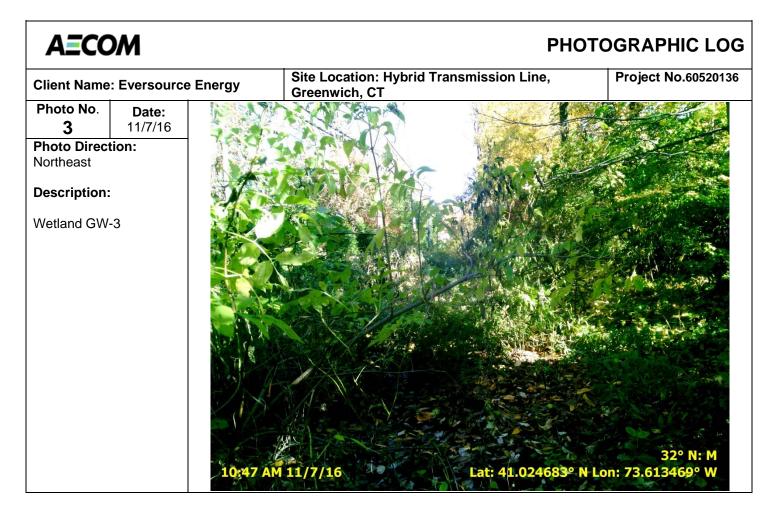
Park Ave

Ν

Appendix C Photographic Documentation



Photo No. 2	Date: 11/7/16	
Photo Direct Northwest	tion:	
Description:	:	CONTRACTOR OF THE CONTRACT OF THE
Wetland GW	-2	





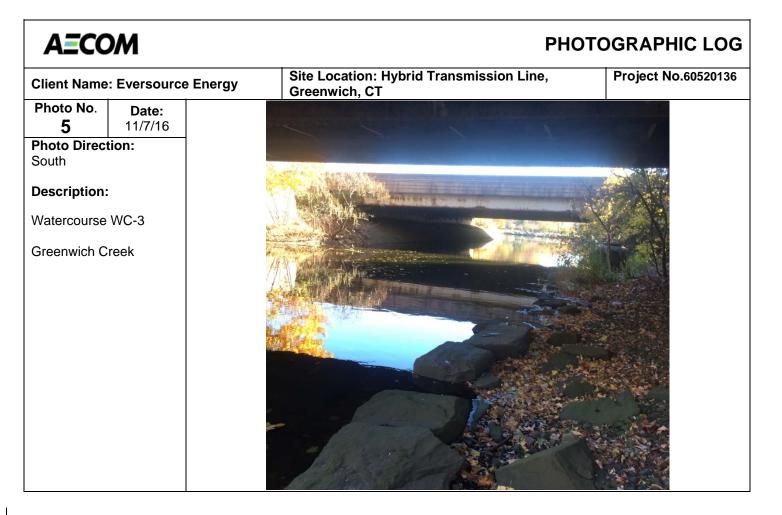


Photo No.	Date:		1 Martin Martin
6	11/7/16	Per at the second second	
Photo Direc West	tion:		
Description	:		
Watercourse	WC-2		
Unnamed Tr Greenwich C	ibutary to Creek		

Appendix D Wetland Transect Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region
Project/Site: <u>ES Greenwich Line</u> City/County: <u>Greenwich Fait Field</u> Sampling Date: <u>11/7/1</u> Applicant/Owner: <u>Eversource Energy</u> State: <u>C</u> Sampling Point: <u>GW</u>
Applicant/Owner: Eversource Energy State: CF Sampling Point: GW
Investigator(s):
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):
Slope (%): Lat: Long: Long:
Soil Map Unit Name:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? YCS Are "Normal Circumstances" present? Yes No Z
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes No X Is the Sampled Area
Hydric Soil Present? Yes No Yes No
Wetland Hydrology Present? Yes No If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedures here or in a separate report.)
-upbad area located adjacent to MINK Macks
-upland area located adjacent to MNR tracks - Highly distubed landscape setting
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) Water-Stained Leaves (B9) Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16)
Saturation (A3)Marl Deposits (B15)Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Oxidized Rizospheres on Living Roots (C3) Studiation Visible on Aena Imagery (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5)
Field Observations:
Surface Water Present? Yes No Depth (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, previous inspections), if available:
-Highly distribut woland area located adjacent to MNR tracks
MINK tracks

VEGETATION - Use scientific names of plants.

Sampling Point: 6-W- 1A

Tree Stratum (Plot size: <u>30 r</u>)		Dominant Species?		Dominance Test worksheet:
		V		Number of Dominant Species
1. Liquidamber styraci Flug			FAL	That Are OBL, FACW, or FAC: (A)
2. Acer ubnom	17_	<u> </u>	FAC	Total Number of Dominant
3. PIUNUS GEIDEINA	17	Y	FALU	Species Across All Strata: (B)
4. Act platanoides	j7	7	UPL	
	-			Percent of Dominant Species 29 76 (A/B)
5				
6		. <u></u>	. <u> </u>	Prevalence Index worksheet:
7	U.r.		. <u> </u>	Total % Cover of:Multiply by:
1	120	= Total Co	Ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 r)				FACW species x 2 =
Sapling/Shrub Stratum (Plot size. ///	61	Y	E.A.J	FAC species x 2 =
1. Lonichia tatarica			FALU	
2. Quercus Iubia	<u> </u>	N		FACU species x 4 =
3	•			UPL species x 5 =
				Column Totals: (A) (B)
4				Prevalence Index = B/A =
5		·		
6				Hydrophytic Vegetation Indicators:
7.				Rapid Test for Hydrophytic Vegetation
	MO			Dominance Test is >50%
<i>C</i> '		= Total Co	ver	Prevalence Index is ≤3.0 ¹
Herb Stratum (Plot size:)	-	K	- Aut	Morphological Adaptations ¹ (Provide supporting
1. Alliana petialota	100		FACU	data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation ¹ (Explain)
3				
				¹ Indicators of hydric soil and wetland hydrology must
4	-			be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
				Woody vines - All woody vines greater than 3.28 ft in
12				height.
D. al	25	= Total Co	ver	5
Woody Vine Stratum (Plot size: 30')	L			
1. Ultis labrusca	Inn	Y	FACU	
	100			
Z				
3		·		Hydrophytic
4				Vegetation Present? Yes No
	75	= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	1			· · · · · · · · · · · · · · · · · · ·
······	,			

Sampling Point: CW-IA

	1	41 1 41				P *		Sampang Fornt.
1	ription: (Describe 1	o the depth				or confirm	the absence	e of Indicators.)
Depth (inches)	Color (moist)		Color (moist)	<u>x Feature</u> %	_Type ¹	Loc ²	Texture	Remarks
D-10"		60					-	Historic Fill
0-18	10 1 1 4/ 1			·	. <u></u>		56	17,5 tarie F/11
	1048516	40						
	A			·				
							<u> </u>	
			·	·				
	<u></u>				<u> </u>			
				·				· · · · · · · · · · · · · · · · · · ·
			·	·				
	oncentration, D=Depl	etion, RM=R	educed Matrix, CS	S=Covered	or Coate	d Sand Gra		cation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators	s for Problematic Hydric Soils ³ :
Histosol	. ,		Polyvalue Belov		(S8) (LRR	lR,		Muck (A10) (LRR K, L, MLRA 149B)
	bipedon (A2)		MLRA 149B)					Prairie Redox (A16) (LRR K, L, R)
Black His		_	_ Thin Dark Surfa					Mucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4) I Layers (A5)	_	Loamy Mucky M			L)		Surface (S7) (LRR K, L)
	Below Dark Surface	- (A11)	Loamy Gleyed Depleted Matrix)			alue Below Surface (S8) (LRR K, L) Dark Surface (S9) (LRR K, L)
	irk Surface (A12)		_ Redox Dark Su					Manganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)	_	_ Depleted Dark		7)			nont Floodplain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		_ Redox Depress		,			Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)							Parent Material (TF2)
Stripped	Matrix (S6)						Very S	Shallow Dark Surface (TF12)
Dark Su	face (S7) (LRR R, N	LRA 149B)					Other	(Explain in Remarks)
3								
	hydrophytic vegetat	on and wetl	and hydrology mus	t be prese	ent, unless	disturbed	or problemati	C.
	ayer (if observed):							
Туре:								
Depth (ind	ches):						Hydric Soi	Present? Yes No
Remarks:			*					1
-Soil	is highly	· dis,	tubed a	nd o	ppro	is to	o he	Fill material
brough	t in as	pol	t of t	Ye '	mN	RH	ack 1	hed,
- //ci	11 diamed	791	ey ioe	• <i>\$</i> 7]				
			*					
L								

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Hydric Soil Present? Yes Yes No Within a Wetland? Yes No If yes, optional Wetland? Yes No No<	Project/Site: ES Gittanich Line City/	County: Greenwich / Fai Field Sampling Date: 11/7/16
Weeting of (s) <u>6</u> ¹ 2 U/1/W M section, Township, Range:	Applicant/Owner. Eversower Energy	State: Sampling Point: 6w-18
andform (hillalope, terrace, etc.):	Investigator(s): 1/5/1/1/10 M Secti	ion. Township. Range:
lope (%): Lat		
oil Map Unit Name:		
re dimatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) re Vegetation		
re Vegetation XSuil Xor Hydrology Xeignificantly disturbed? Y/S_Are "Normal Circumstances" present? YesNo XNo X(If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes XNoIs the Sampled Area within a Wetland? Yes XNoIf yes XNoIf yes, optional Wetland Site ID:		
re Vegetation		
WMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? No Yes No If yes, optional Wetland Site ID: If yes, optional		
Hydrophytic Vegetation Present? Yes Yes No Is the Sampled Area within a Wetland? Yes No If yes, optional Wetland Site ID: If yes, o	Are Vegetation, Soil, or Hydrology naturally problem	atic? (If needed, explain any answers in Remarks.)
No	SUMMARY OF FINDINGS – Attach site map showing sar	npling point locations, transects, important features, etc.
Index Index Index If yes, optional Wetland Site ID: Remarks: (Explain alternative procedures here or in a separate report.) IVDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Hydrophytic Vegetation Present? Yes 🗡 No	Is the Sampled Area
Remarks: (Explain alternative procedures here or in a separate report.) IVDROLOGY Secondary Indicators: (minimum of two required; check all that apply) Primary Indicators (minimum of one is required; check all that apply) X Surface Soil Cracks (B6)		within a Wetland? Yes <u>No</u> No
IVDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply)		If yes, optional Wetland Site ID:
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)		
Primary Indicators (minimum of one is required; check all that apply)	HYDROLOGY	
	Wetland Hydrology Indicators:	
	Primary Indicators (minimum of one is required; check all that apply)	K_ Surface Soil Cracks (B6)
	· · ·	
Water Marks (B1)		
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No No Depth (includes capillary fringe) Depth (inches): Wetland Hydrology Present? Yes Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		
Algal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2) Iron Deposits (B5)Thin Muck Surface (C7)Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8)FAC-Neutral Test (D5) Field Observations: Surface Water Present? YesNo Depth (inches): Saturation Present? YesNo YesNoDepth (inches):		
Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes X No Depth (inches): Cincludes capillary fringe) Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes X Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Observations:	
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No No
-Highly disturbed wetland adjacent to MNR Hacks.		evious inspections), if available:
-Highly disturbed wetland adjacent to MNR Hacks.		
-Highly disturbed netland adjacent to MNR Hacks.	Pematks:	
	-Highly disturbed wetland adj	quant to MNR Hacks.

SOIL

	(4. 1P
Sampling Point:	6-10-10

Profile Desc	cription: (Describe	to the depth	needed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Features	5			
(inches)	Color (moist)		Color (moist)	%	Type'	Loc ²	_	Remarks
0-18	10 7/40/1	70	7.54R5/6	20	2	m	56	
	10 4R5/1	30						
							······	
						·	<u> </u>	
					<u> </u>			
						<u></u>		
	4-*····							
<u>.</u>			<u></u>					
¹ Type: C=Co	oncentration, D=Depl	etion, RM=R	educed Matrix, CS	=Covered	or Coate	d Sand Gr		ation: PL=Pore Lining, M=Matrix.
Hydric Soil I Histosol			Debaselue Delev	0	(00) (1 00			or Problematic Hydric Soils ³ :
	vipedon (A2)		Polyvalue Below MLRA 149B)		(58) (LRH	К,		uck (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R)
Black His			_ Thin Dark Surfa		RR R, ML	.RA 149B)		ucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		_ Loamy Mucky M	-		L)	Dark Su	irface (S7) (LRR K, L)
	l Layers (A5) I Below Dark Surface		Loamy Gleyed N)			the Below Surface (S8) (LRR K, L)
	rk Surface (A12)		Depleted Matrix Redox Dark Sur					rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R)
	ucky Mineral (S1)		Depleted Dark S		7)			nt Floodplain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		Redox Depressi	ons (F8)				podic (TA6) (MLRA 144A, 145, 149B)
X Sandy R	edox (S5) Matrix (S6)							rent Material (TF2)
	face (S7) (LRR R, M	LRA 149B)						allow Dark Surface (TF12) Explain in Remarks)
Indicators of	hydrophytic vegetati ayer (if observed):	on and wetla	nd hydrology must	t be prese	nt, unless	disturbed	or problematic.	
Type:								
Depth (inc			-				Hydric Soil F	Present? Yes X. No
Remarks:								
		1	11 1 -	-1	11			
- Migh	ly cistuin	d u	eHand So	o_1 / ι	vith	9191	$e \mid n_i;$	ked in profile,
- 70%	jord to	י רוח	Drie and	z p	PY 100	10 p	resent N	ay distribunce.
								7

VEGETATION – Use scientific names of plants.

Sampling Point: Gw-18

*				,
Tree Stratum (Plot size:)		Dominant Species2		Dominance Test worksheet:
		Species?		Number of Dominant Species
1. None				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata:(B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
5			. <u> </u>	That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				
· · · · · · · · · · · · · · · · · · ·				Total % Cover of:Multiply by:
		= Total Cov	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15)		1.	-	FACW species x 2 =
1. Rosa multiFlorg	56	7	FALV	FAC species x 3 =
2. Langeria tatolica			FALV	FACU species x 4 =
	/7_		11/20	UPL species x 5 =
3		· · · · · · · · · · · · · · · · · · ·		Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
				Rapid Test for Hydrophytic Vegetation
7.				
	90	= Total Cov	ver	Dominance Test is >50%
Herb Stratum (Plot size:)				Prevalence Index is ≤3.0 ¹
1. Philogmites australis	77	r	FACW	 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2. Inpatiens capensis	ר 2	7	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. preparente se a se a			1110	
3				¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				
				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				of size, and woody plants less than 5.20 it tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	(120)	= Total Cov	Ver 7	height.
	L	10101 00		
Woody Vine Stratum (Plot size:)				
1				
2				
3			······	Hydrophytic Vegetation
4				Present? Yes No
		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			

WETLAND DETERMINATION DATA FORM -- Northcentral and Northeast Region

Project/Site: ES Greenwich Line		h/Fair Fre H Sampling Date: 11/7/16		
Project/site: <u>F5 Brenchengen sinc</u>				
Applicant/Owner: EVISOULE EARION		State: Sampling Point:		
Landform (hillslope, terrace, etc.):				
Slope (%): Lat:	Long:	Datum:		
Soil Map Unit Name:		NWI classification:		
Are climatic / hydrologic conditions on the site typical for this time of	iyear? Yes 🗶 No	(If no, explain in Remarks.)		
Are Vegetation 🗶 , Soil 🗶 , or Hydrology 🗶 significa	*			
Are Vegetation, Soil, or Hydrology naturally	*			
SUMMARY OF FINDINGS – Attach site map show	ng sampling point locat	ions, transects, important features, etc.		
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	within a Wetland?	Yes No		
Remarks: (Explain alternative procedures here or in a separate r	:port.)			
HYDROLOGY	<u></u>			
Wetland Hydrology Indicators:	<u></u>	Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that ap	Iv)	Surface Soil Cracks (B6)		
	ed Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2) Aquatic Fa		Moss Trim Lines (B16)		
Saturation (A3) Marl Depos		Dry-Season Water Table (C2)		
	ulfide Odor (C1)	Crayfish Burrows (C8)		
) Saturation Visible on Aerial Imagery (C9)		
	Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
	Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5) Thin Muck		Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7) Other (Exp	ain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		FAC-Neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes No Depth (inc	ies):			
Water Table Present? Yes No 🔀 Depth (ind	tes):			
Saturation Present? Yes No Depth (inc (includes capillary fringe)		Hydrology Present? Yes No X		
Describe Recorded Data (stream gauge, monitoring well, aerial p	iotos, previous inspections), if av	vailable:		
Remarks:				

VEGETATION – Use scientific names of plants.

Sampling Point:

Tree Stratum (Plot size: 30)	% Cover Spec		Dominance Test worksheet: Number of Dominant Species
1. Acer Platanoides			That Are OBL, FACW, or FAC: (A)
2. Flaxinus americana		·	Total Number of Dominant Species Across All Strata: 4 (B)
4			
5			Percent of Dominant Species That Are OBL, FACW, or FAC:O 2/2 (A/B)
6	<u> </u>		Prevalence Index worksheet:
7			Total % Cover of: Multiply by:
IE r	Jao = Tota	al Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)	<u> </u>	· · · · ·	FACW species x 2 = FAC species x 3 =
1. Acer platanoides		<u> </u>	FACU species x 4 =
2. Robinia pscucoacacia		- FREV	UPL species x 5 =
3. Umus anti icana	<u>15</u> <u>1</u>	FACW	Column Totals: (A) (B)
4			
5		<u> </u>	Prevalence Index = B/A =
6			Hydrophytic Vegetation Indicators:
7			Rapid Test for Hydrophytic Vegetation
	65 = Tota	al Cover	Dominance Test is >50%
Herb Stratum (Plot size:)			Prevalence Index is ≤3.0 ¹
			Morphological Adaptations ¹ (Provide supporting
1. None			data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
2			
3			¹ Indicators of hydric soil and wetland hydrology must
4		·····	be present, unless disturbed or problematic.
5			Definitions of Vegetation Strata:
6			Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8			Sapling/shrub – Woody plants less than 3 in. DBH
9			and greater than 3.28 ft (1 m) tall.
10			Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12			Woody vines - All woody vines greater than 3.28 ft in
	= Tot	al Cover	height.
Woody Vine Stratum (Plot size: 30 r)			1
	100	Y	
1. Lenjera sp		<i>↓</i>	
2			
3			Hydrophytic Vegetation
4		·····	Present? Yes No X
		al Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)	-	
L			

Sampling Point: GW-24

301L						Sampang Point.
Profile Description: (Describe to the de				or confirm	the absence of	of indicators.)
Depth <u>Matrix</u> (inches) <u>Color (moist) %</u>	Color (moist)	K Features %	Type ¹	Loc ²	Texture	Remarks
						See Below
				<u> </u>		
	<u> </u>					
				. <u> </u>	· · · · · · · · · · · · · · · · · · ·	
¹ Type: C=Concentration, D=Depletion, RN	=Reduced Matrix, CS	=Covered	or Coate	d Sand Gra		ation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:				_		for Problematic Hydric Soils ³ :
Histosol (A1)	Polyvalue Belov		58) (LRF	RR,		uck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2) Black Histic (A3)	MLRA 149B) — Thin Dark Surfa			DA 1400		Prairie Redox (A16) (LRR K, L, R) ucky Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4)	Loamy Mucky N					urface (S7) (LRR K, L)
Stratified Layers (A5)	Loamy Gleyed N			·/		ue Below Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11)	Depleted Matrix				-	ark Surface (S9) (LRR K, L)
Thick Dark Surface (A12)	Redox Dark Sur					anganese Masses (F12) (LRR K, L, R)
Sandy Mucky Mineral (S1)	Depleted Dark S	Surface (Fi	7)		Piedmo	ont Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed Matrix (S4)	Redox Depressi	ions (F8)				Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)						irent Material (TF2)
Stripped Matrix (S6)	D)					nallow Dark Surface (TF12)
Dark Surface (S7) (LRR R, MLRA 149	D)					Explain in Remarks)
³ Indicators of hydrophytic vegetation and w	etland hydrology mus	t be prese	nt, unless	disturbed	or problematic	
Restrictive Layer (if observed):						
Туре:						
Depth (inches):					Hydric Soil	Present? Yes No
Activities.	11			1 de	nacile.	1 ELLER
- This area was	en tre y	91	aw	, 7	00 31 14	
Remarks: - This area was as MNR track	hodding	ma	teri	al.		
	·I		1			
- No actual so	1 0057	up o				
						· · · · · · · · · · · · · · · · · · ·

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 15 Greenwich Line	_ City/County: Greenwit 4/Far Freid Sampling Date: 11/7/16			
Applicant/Owner: Evel source Energy	State: <u>LT</u> Sampling Point: <u>GW-2B</u>			
	Section, Township, Range:			
· · · · · · · · · · · · · · · · · · ·	Local relief (concave, convex, none):			
	Long: Datum:			
Soil Map Unit Name:	NWI classification:			
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No (If no, explain in Remarks.)			
Are Vegetation X, Soil X, or Hydrology x significant	tly disturbed? Y 🧨 Are "Normal Circumstances" present? Yes No 🗶			
Are Vegetation, Soil, or Hydrology naturally p	*			
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	If yes, optional Wetland Site ID:			
Remarks: (Explain alternative procedures here or in a separate rep - Isolated, highly disturbed m accumulation of gaibage/	Hond with significant			
- Adjacent to MNR tracks				
HYDROLOGY				
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply	y) X Surface Soil Cracks (B6)			
Surface Water (A1)	· · · · · · · · · · · · · · · · · · ·			
High Water Table (A2) Aquatic Faun				
Saturation (A3) Marl Deposite				
	Ifide Odor (C1) Crayfish Burrows (C8)			
	zospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)			
	Reduced Iron (C4) Stunted or Stressed Plants (D1)			
	Reduction in Tilled Soils (C6) Geomorphic Position (D2)			
Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)			
Field Observations:				
Surface Water Present? Yes No X Depth (inche	es);			
Water Table Present? Yes No 🗶 Depth (inche				
Saturation Present? Yes No X Depth (inche				
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), ir available:			
Remarks:				

V

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US Army Corps of Engineers

/EGETATION - Use	scientific names	of p	plants.
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Sampling Point:

Tree Stratum (Plot size:)	Absolute % Cover	Dominant I Species?		Dominance Test worksheet:
				Number of Dominant Species
1. None				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cove		OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1. NONE				FAC species x 3 =
- (1) - (1)				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophytic Vegetation
		= Total Cove	r	Dominance Test is >50%
Herb Stratum (Plot size:)				Prevalence Index is ≤3.0 ¹
1. Ly throm salvegria	100	ሦ	ORL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation ¹ (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
14				of size, and woody plants less than 3.28 ft tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	SO	= Total Cove		height.
Woody Vine Stratum (Plot size:)				
1. <u>None</u>				
2				
3				Hydrophytic
4				Vegetation Present? Yes No
		= Total Cove	r	
Remarks: (Include photo numbers here or on a separate s - Dre to heav shading Fran Sparsely Vegetaked.	adje	ocent	h	es, wetlond is

Sampling Point: GW28

Profile Desc Depth	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features							s.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type1	Loc ²	Texture		Remarks
0.70	104 R2/1	100					56	mucky	mineral soil
							·		
								i-	
						···· · · · · ·			
¹ Type: C=Co Hydric Soil	oncentration, D=Depl	etion, RM=R	educed Matrix, C	S=Covered	l or Coate	d Sand Gra			ore Lining, M=Matrix. atic Hydric Soils ³ :
 Histosol Histic Ep Black Hi Hydroge Stratified Depleted X Sandy M Sandy R Sandy R Stripped Dark Su 	(A1) oipedon (A2) stic (A3) n Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) fucky Mineral (S1) oleyed Matrix (S4) tedox (S5) Matrix (S6) rface (S7) (LRR R, M	 LRA 149B)	 Polyvalue Belo MLRA 149B Thin Dark Surfa Loamy Mucky I Loamy Gleyed Depleted Matrix Redox Dark Su Depleted Dark Redox Depress) ace (S9) (L Mineral (F1 Matrix (F2 x (F3) wrface (F6) Surface (F6) sions (F8)	.RR R, ML I) (LRR K ,) 7)	.RA 149B) L)	2 cm Coast 5 cm Dark s Polyva Thin D Iron-M Piedm Mesic Red F Very s Other	Muck (A10) (L Prairie Redox Mucky Peat o Surface (S7) (alue Below Su Dark Surface (Manganese Ma Dark Surface (Manganese Ma Dark Surface (Anganese Ma Shallow Dark (Explain in Re	RR K, L, MLRA 149B) (A16) (LRR K, L, R) r Peat (S3) (LRR K, L, R) LRR K, L) urface (S8) (LRR K, L) S9) (LRR K, L) asses (F12) (LRR K, L, R) n Soils (F19) (MLRA 149B) (MLRA 144A, 145, 149B) I (TF2) Surface (TF12)
	f hydrophytic vegetati	on and wetla	and hydrology mus	st be prese	ent, unless	disturbed	or problemati	C.	
Туре:			_						····· · ·
Depth (in	ches):						Hydric Sol	I Present?	Yes No No
Remarks:									

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: ES Greenwich Line	City/County:	state: <u>CT</u> Sampling Date: <u>117/16</u>
Applicant/Owner: Encigy		State: Sampling Point: GW-3A
Investigator(s): 0'50//i/4 /		ip, Range:
Landform (hillslope, terrace, etc.):	Local	relief (concave, convex, none):
Slope (%): Lat:	Long:	Datum:
Soil Map Unit Name:		NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of ye	ear?Yes 🗶	No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology significantly	disturbed? Y	Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally pro	oblematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	y sampling po	bint locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes Yes	No 🗶	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present?	Yes	No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedur	es here or in a s	separate report.)	

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) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	ils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (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, previous inspec	lions), if available:
Remarks:	· · · · · · · · · · · · · · · · · · ·

VEGETATION - Use scientific names of plants.

Sampling Point: 6-8-3 A

2.12		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1. Carya glatua	100		<u>F960</u>	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
, et e	70	= Total Co	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15)		4	- · · ·	FACW species x 2 =
1. ELONYMUS glatus	60		FACU	FAC species x 3 =
2. Rosa multi Flora	30	<u> </u>	FACU	FACU species x 4 = UPL species x 5 =
3. Lonicera tatarica	10	<u>_N</u>		Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophytic Vegetation
	MOD	= Total Co	ver	Dominance Test is >50%
Herb Stratum (Plot size: 57)				Prevalence Index is ≤3.0 ¹
1. Alliaria petiolata	160	<u> </u>	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation ¹ (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4		. <u></u>		be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12	-			Woody vines – All woody vines greater than 3.28 ft in height.
2015	1-du	= Total Co	ver	
Woody Vine Stratum (Plot size:)	11	V	. 01	
1. Celastans andicularus	69	<u> </u>	UPL	
2. Lanicesa sp		<u> </u>		
3				Hydrophytic
4				Vegetation Present? Yes No X
	- 90	= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Sampling Point:

Profile Desc	cription: (Describe	to the dept	h needed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature	6			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16"	104R3/3	100					56	TERSO DOL
1.4.1.4	10							above 16" mithink
								Luna C
				·				+IMP>
		· · · · · · · · ·						
	·····			·				
				·		<u> </u>		
	·····		· · · · · · · · · · · · · · · · · · ·					
17 0.0			D 1 1111 00				. 21	
Hydric Soil	oncentration, D=Dep Indicators:	pletion, RM=	Reduced Matrix, CS	S=Covered	d or Coate	d Sand Gra		cation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
Histosol			Polyvalue Belov	u Surface	(58) /1 DE	D		Muck (A10) (LRR K, L, MLRA 149B)
	pipedon (A2)		MLRA 149B)		(30) (LR	Λ IN ₂		Prairie Redox (A16) (LRR K, L, R)
	istic (A3)		Thin Dark Surfa	,	_RR R, MI	RA 149B)		Mucky Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Mucky N					Surface (S7) (LRR K, L)
	d Layers (A5)		Loamy Gleyed I		2)			alue Below Surface (S8) (LRR K, L)
	d Below Dark Surfac	e (A11)	Depleted Matrix					Dark Surface (S9) (LRR K, L)
	ark Surface (A12)		Redox Dark Su					Manganese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark \$ Redox Depress		-7)			nont Floodplain Soils (F19) (MLRA 149B) Spodic (TA6) (MLRA 144A, 145, 149B)
	Redox (S5)							Parent Material (TF2)
	Matrix (S6)							Shallow Dark Surface (TF12)
	irface (S7) (LRR R, I	MLRA 1498)					(Explain in Remarks)
3								
	f hydrophytic vegeta		tland hydrology mus	st be prese	ent, unless	s disturbed	or problemati	C
	Layer (if observed)	•						
Туре:	·····							
Depth (in	ches):						Hydric Sol	I Present? Yes No
Remarks:								
1								

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

WEILAND DETERMINATION DATA FORM - Northcentral and Northeast Region
Project/Site: ES Grannych Line City/County: Grannich/Fair Fick Sampling Date: 1/7/16
Applicant/Owner: Ever Source Energy State: CT Sampling Point: 64-38
Investigator(s):
Landform (hillslope, terrace, etc.):
Slope (%): Lat: Long: Long: Datum:
Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes Yes No Is the Sampled Area within a Wetland? Yes X No Hydric Soil Present? Yes Yes No If yes, optional Wetland Site ID: No If yes, optional Wetland Site ID: If yes, optional Wetland Site ID: Remarks: (Explain alternative procedures here or in a separate report.) If yes, optional Wetland Site ID: If yes, optional Wetland Site ID:
HYDROLOGY Wetland Hydrology Indicators:
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9) X Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16)
X Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4) X Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Microlopographic Rener (D4)
Field Observations:
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes X No Saturation Present? Yes X No Depth (inches): Wetland Hydrology Present? Yes X No (includes capillary fringe) Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
- soil saturate de mineral soil surface - sec profile description For more in Formation
- sec profile description For more in Formation

VEGETATION – Use scientific names of plants.

Sampling Point: <u>6-W-3B</u>

<u>Tree Stratum</u> (Plot size:) 1)		Dominant Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)
23				Total Number of Dominant Species Across All Strata:
4 5				Percent of Dominant Species 75% (A/B)
6			·	Prevalence Index worksheet:
- / ·				Total % Cover of:Multiply by:
Sapling/Shrub Stratum (Plot size: 15 /)		= Total Cov	/er	OBL species x 1 =
	160	Y	FACW	FACW species x 2 =
1. Sambucus migta			PHCW	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 = Column Totals: (A) (B)
4				
				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
6				Rapid Test for Hydrophytic Vegetation
7				Dominance Test is >50%
-	FIQ.	= Total Cov	/er	$ Prevalence Index is \leq 3.0^{1}$
Herb Stratum (Plot size:)	6			Morphological Adaptations ¹ (Provide supporting
1. Balance Frondosa	50	<u> </u>	FACW	data in Remarks or on a separate sheet)
2. Empatiens capensis	50	<u> </u>	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4	<u> </u>			be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6 7				Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in height.
21-	140	= Total Co	/er	noight.
Woody Vine Stratum, (Plot size:)		~		
1. Vitis labirsca	100		FACU	
2				
3		<u> </u>	<u> </u>	Hydrophytic
4				Vegetation Present? Yes X No
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate				1 1 / 0 1 1 1
-large unvegetated area				due to expended
periods of Flooding / S	hand	is My	0.	

Sampling Point:	W-3	B
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Profile Descri	ption: (Describe to	o the dept	h needed to docum	ent the	indicator	or confirm	the absence of	indicators.)		
Depth _	Matrix			Feature						
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	F	Remarks	
6-0					,			<u>O</u> a		
Q-B".	10 YR2/1	100					VFSL	A		
13-18 +	10YRS/2	50	7.54R5/6	10	.6	M	56	Re		
	IUYR5/1	50					SL	9		
						·····				
					<u> </u>					
Hydric Soil In	dicators:	tion, RM=	Reduced Matrix, CS=	-Covered	d or Coate	d Sand Gr	ains. ² Location Indicators for	n: PL=Pore	Lining, M=	Matrix.
Histosol (A			Polyvalue Below	Surface	(S8) (LRE	R.		k (A10) (LRR	-	
📝 Histic Epip	edon (A2)	-	MLRA 149B)		(/(,		irie Redox (A		
Black Histi		-	Thin Dark Surfac					ky Peat or Pe		RR K, L, R)
Y Hydrogen	ayers (A5)	-	Loamy Mucky Mi Loamy Gleyed M			L)		ace (S7) (LR		
	Below Dark Surface	(A11) -	Depleted Matrix ()			Below Surfa Surface (S9)		
	Surface (A12)		Redox Dark Surf					anese Mass		
Sandy Mu	cky Mineral (S1)	-	Depleted Dark S							MLRA 149B)
	yed Matrix (S4)	-	Redox Depressio					dic (TA6) (M		
Sandy Rec							Red Parer	nt Material (T	F2)	
Stripped M		D.A. 4 40D						ow Dark Sur)
Dark Suria	ice (S7) (LRR R, MI	.KA 149B)				Other (Exp	olain in Rema	arks)	
³ Indicators of h	ydrophytic vegetatic	n and wet	land hydrology must	be prese	ent, unless	disturbed	or problematic.			
	yer (if observed):							···· /2/ /2		
Туре:							:			
Depth (inche	es):						Hydric Soil Pre	sent? Ye	s_X	No
Remarks:					<u> </u>					······································

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: ES Grewich Line	City/County: Greenwy'ch	First Fridd Sampling Date: 11/7/16 State:Sampling Point: <u>Gw -44</u>
Applicant/Owner: EVISOULCE EARroy		State: Sampling Point:
Investigator(s): USullivan		· · · · · · · · · · · · · · · · · · ·
Landform (hillslope, terrace, etc.):	Local relief (conca	ve, convex, none):
Slope (%): Lat:	Long:	Datum:
Soil Map Unit Name:		NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	/ disturbed? Yrs Are "Norma	l Circumstances" present? Yes No 🔀
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed,	explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	y sampling point location	ons, transects, important features, etc.

Yes Yes	No <u>¥</u> No <u>¥</u>	Is the Sampled Area within a Wetland? Yes No
Yes	No	If yes, optional Wetland Site ID:
ures here or in a	separate report.)	
	Yes Yes	Yes No

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)	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) Water-Stained Leaves (B9)	Drainage Patterns (B10)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8) Depth (inches): FAC-Neutral Test (D5) Surface Water Present? Yes No Depth (inches):	High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
	Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5) Field Observations:	Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8)	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roc	ots (C3) Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Microtopographic Relief (D4)Sparsely Vegetated Concave Surface (B8)FAC-Neutral Test (D5) Field Observations: Surface Water Present? YesNo Depth (inches): Water Table Present? YesNo Depth (inches): Saturation Present? YesNo Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes No	Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils	(C6) Geomorphic Position (D2)
Sparsely Vegetated Concave Surface (B8)FAC-Neutral Test (D5) Field Observations: Surface Water Present? YesNo Depth (inches): Water Table Present? YesNo Depth (inches): Saturation Present? YesNo Depth (inches): (includes capillary fringe) Wetland Hydrology Present? YesNo	Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes No	Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes No	Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Wetland Hydrology Present? Yes No No		
Saturation Present? Yes No Y Depth (inches): Wetland Hydrology Present? Yes No X	Surface Water Present? Yes No Kentry Depth (inches):	
(includes capillary fringe)	Water Table Present? Yes No Depth (inches):	
(includes capillary fringe)	Saturation Present? Yes No 🗶 Depth (inches): W	/etland Hydrology Present? Yes No 🔀
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes capillary fringe)	······································
	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection	is), if available:
Remarks:	Remarks:	

VEGETATION - Use scientific names of plants.

	AL	D	1	, , , , , , , , , , , , , , , , , , , ,
Tree Stratum (Plot size: <u>30'r</u>)		Dominant Species?		Dominance Test worksheet:
				Number of Dominant Species
1. Acer platonoices	100		MACU	That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant
3		· ·		Species Across All Strata: (B)
4				Percent of Dominant Species
				That Are OBL, FACW, or FAC: (A/B)
5				
6			. <u> </u>	Prevalence Index worksheet:
7				
	17		~	Total % Cover of:Multiply by:
Sapling/Shrub Stratum (Plot size: 15 ()	1.60	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)	L			FACW species x 2 =
1. Queicus Isla	1000	4	FALL	FAC species x 3 =
- Querces Ivare	100		TUE	FACU species x 4 =
2				
3				UPL species x 5 =
1				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7	10.10		100	Rapid Test for Hydrophytic Vegetation
	120		-7	Dominance Test is >50%
	120	= Total Cov	er	Prevalence Index is ≤3.0 ¹
Herb Stratum (Plot size:)				
1 10000				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1. <u>nanc</u>				
2				Problematic Hydrophytic Vegetation ¹ (Explain)
3				
1				¹ Indicators of hydric soil and wetland hydrology must
4		· ·		be present, unless disturbed or problematic.
5				Definitions of Versteller Streter
				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Here All horhoppoly (here woody) plants removaling
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11			· · · · · · · · · · · · · · · · · · ·	or size, and woody plants less than 5.20 it tail.
12.				Woody vines - All woody vines greater than 3.28 ft in
				height.
		= Total Cove	er	
Woody Vine Stratum (Plot size:)				
1 ADAR				
1. Aane				
2			<u> </u>	
3				
				Hydrophytic Vegetation
4				Present? Yes No
		= Total Cove	er	
Remarks: (Include photo numbers here or on a separate	sheet)			
- when a plat large	an	1JP1	v S	ters availed
Vijinito piut integrec		3 1		1 1/4001
anharking I Tar MAND	hours	4C		
- upland plot located embankment For MNR	71401	レン.		
на тр.				

US Army Corps of Engineers

Sampling	Point:	Gw-	4A

JOIL					Sampling Point: 6-10 7M
Profile Description: (Describe to the			or confirm	the absence of in	dicators.)
Depth <u>Matrix</u> (inches) Color (moist)	% Color (moist)	Features % Type ¹	Loc ²	Texture	Remarks
					Sa helow
	····				
			<u> </u>		
			<u> </u>		
					······
		·······		······	
					······································
			<u> </u>	·····	
¹ Type: C=Concentration, D=Depletion	n, RM=Reduced Matrix, CS=	Covered or Coate	d Sand Gra		: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1)	Pohyolus Polour				Problematic Hydric Soils ³ :
Histic Epipedon (A2)	Polyvalue Below (MLRA 149B)		irt,		(A10) (LRR K, L, MLRA 149B) e Redox (A16) (LRR K, L, R)
Black Histic (A3)	Thin Dark Surface			5 cm Mucky	Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4) Stratified Layers (A5)	Loamy Mucky Mir Loamy Gleyed Ma		L)		e (S7) (LRR K, L) elow Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A*	1) Depleted Matrix (F	F3)			urface (S9) (LRR K, L)
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Redox Dark Surfa				nese Masses (F12) (LRR K, L, R)
Sandy Gleyed Matrix (S4)	Depleted Dark Su Redox Depression				loodplain Soils (F19) (MLRA 149B) ic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)				Red Parent	Material (TF2)
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA	149B)				w Dark Surface (TF12) ain in Remarks)
³ Indicators of hydrophytic vegetation a Restrictive Layer (if observed):	and wetland hydrology must b	pe present, unless	disturbed o	or problematic.	
Туре:					
Depth (inches):				Hydric Soil Pres	ent? Yes No
Remarks:	1	. 1	I	,	1 11 1
- uplan à plat la	ocated an v	ery Ste	70 9	rawl	em han K Manst
For MAR tra	cks.				
· · · · · · · · · · · · · · · · · · ·					

WETLAND DETERMINATION DATA FORM Nort	hcentral and Northeast Region
Project/Site: <u>ES Greenwich Line</u> City/County: <u>Gree</u> Applicant/Owner: <u>Evel source Energy</u> Investigator(s): <u>O'Sulliven</u> Section, Township,	nwich Fais Fred Sampling Date: 11/7/16 State: 67 Sampling Point: 64-46 Range:
Landform (hillslope, terrace, etc.): Local re	
Slope (%): Lat: Long:	Datum:
	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes N	o (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology X significantly disturbed?	re "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (I	-
SUMMARY OF FINDINGS - Attach site map showing sampling poir	
Hydrophytic Vegetation Present? Yes No Is the Samp within a We	
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1) X Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Crayfish Burrows (C8)
🗶 Sediment Deposits (B2) Oxidized Rhizospheres on Living R	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soi	
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8) Field Observations:	FAC-Neutral Test (D5)
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes No _X Depth (inches):	
	Wetland Hydrology Present? Yes <u>X</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	ions), if available:
Remarks:	······
Tomana.	

VEGETATION - Use scientific names of plants.

Sampling Point:

Tree Stratum (Plot size: 30'r)		Dominant Species?		Dominance Test worksheet:
				Number of Dominant Species
1. Liquidambar StyraciFlug	100		FAL	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata:
4				
				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	And and a state of the state of	= Total Cov		
		- Fotal COV	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)	12			FACW species x 2 =
1. none				FAC species x 3 =
2	_			FACU species x 4 =
3				UPL species x 5 =
				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophytic Vegetation
· ·		·		Dominance Test is >50%
and the second se		= Total Cov	/er	Prevalence Index is $\leq 3.0^{1}$
Herb Stratum (Plot size:)		1.5		
1. Phiagmitrs aus halis	100	۲.	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				
				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10				Herb All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				of size, and woody plants less than 5.20 it tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	100 :	= Total Cov	er	height.
Woody Vine Stratum (Plot size:)		4		}
Woody whe duatant (Flot size)				
1				
2				
3				Hydrophytic
Δ				Vegetation
····				Present? Yes No
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate s	sheet.)			
my alle I cround up	and also		o h	have le chided
WETLAND Sparsey VE	ge lan			reavity snaces
- wetland sporsely ve conditions produced by a	adras	off 1	ombri	Ampat and free
within procues by	1. 700	774 (~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	A CONTRACT OF AN A CONTRACT OF A
conopy.				
e e				
······································				

Sampling Point	(w-	4B
oumpring i onit		1.1

Profile Description: (Describe to the dep	oth needed to docur	nent the indicate	or or confirm	the absence of	indicators.)
Depth Matrix		x Features			
(inches) Color (moist) %	Color (moist)	<u>%</u> Type			Remarks
0-19" 104R211 100				VFSL	mucky
		·			
					· · · · · · · · · · · · · · · · · · ·
		·			
			<u> </u>		
		•			· · · · · · · · · · · · · · · · · · ·
	· ·				
		· ·····			
¹ Type: C=Concentration, D=Depletion, RM	=Reduced Matrix, CS	S=Covered or Coa	ated Sand Gra		ion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:					or Problematic Hydric Soils ³ :
Histosol (A1)		w Surface (S8) (L	RR R,		ck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2)	MLRA 149B) ace (S9) (LRR R,			airie Redox (A16) (LRR K, L, R)
Black Histic (A3)	Loamy Mucky M				cky Peat or Peat (S3) (LRR K, L, R) face (S7) (LRR K, L)
Hydrogen Sulfide (A4) Stratified Layers (A5)	Loamy Gleyed		κ, Ε)		e Below Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11)	Depleted Matrix				k Surface (S9) (LRR K, L)
X Thick Dark Surface (A12)	Redox Dark Su				ganese Masses (F12) (LRR K, L, R)
Sandy Mucky Mineral (S1)	Depleted Dark				t Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed Matrix (S4)	Redox Depress	ions (F8)		Mesic Sp	odic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)					ent Material (TF2)
Stripped Matrix (S6)					allow Dark Surface (TF12)
Dark Surface (S7) (LRR R, MLRA 149	B)			Other (E:	xplain in Remarks)
3					
³ Indicators of hydrophytic vegetation and w	etland hydrology mus	st be present, unle	ess disturbed	or problematic.	
Restrictive Layer (if observed):					
Туре:					
Depth (inches):				Hydric Soil Pi	resent? Yes No
Remarks:				J	
1					

Note: This page left intentionally blank