Independent Solar, LLC Section F
Full Environmental Assessment

Section F.1
Changes made to FEAF based on errors with the EAF mapper

Section F.2
Status of agency consultations

Federally Listed Threatened and Endangered Species

- The U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) was consulted on May 7, 2019 and again on January 23, 2020. The New York Field Office's online project review process identified the Northern Long-eared bat (NLEB), Indiana Bat, and Bog Turtle as potentially occurring in the vicinity of the Project.
    - Bog Turtle: A habitat survey for the Bog Turtle was completed by TRC on July 16, 2019. During the survey, it was determined that none of the 6 delineated wetlands on site provide suitable habitat for the Bog Turtle. On March 11, 2020, the USFWS concurred with the findings of the survey, agreeing that the project will not result in a take of the species
    - Indiana Bat: On March 11, 2020, the USFWS determined that a take of the Indiana Bat is not anticipated to occur since project activities will not include any tree clearing.

State-Listed Threatened and Endangered Species

- New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper (ERM) dated May 7, 2019 shows the absence of state-listed threatened and endangered species in the vicinity of the project site. During site reconnaissance, however, a Northern Harrier (NYS threatened species) was observed. Consultation with DEC regarding this species sighting was initiated on April 30, 2020 and a response was received on June 9, 2020. This response did not indicate any need for bird surveys on the Project Site.

Cultural Resources

- New York State Office of Parks, Recreation, and Historic Preservation (SHPO) correspondence was initiated on February 13, 2020, and a response was received on March 2, 2020, requesting that a Phase IA/IB survey be conducted to determine the presence or

absence of archaeological resources in areas where substantial ground disturbance is proposed. The Phase IA/IB survey is currently pending, the results of which will be provided to the SHPO.

Wetland and Water Resources

- TRC performed a wetland and waterbody delineation on April 29/30, 2019 at the Project Site. Based on the current Project Design, impacts to jurisdictional features are not anticipated, and no permits will be required.

Federal Wetlands and Streams

- A request for a No Permit Required determination was made to the U.S. Army Corps of Engineers to verify the boundaries of the wetland delineation on March 18, 2020. A response was received on April 2, 2020 stating, "since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material."

Section F.3

Attachments and supporting documents included with this application.

- Full Environmental Assessment Form
- NYSDEC Environmental Resource Mapper Review
- USFWS Correspondence
- DEC Correspondence
- SHPO Correspondence
- Wetland Delineation Report
- USACE No Permit Required determination
- USDA NRCS Soill Report

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Independent Solar, LLC		
Project Location (describe, and attach a general location map): 206 Milton Turnpike, north of the intersection with Clarks Ln.		
Brief Description of Proposed Action (include purpose or need): Independent Solar, LLC is proposing to construct an approximately 3,000 kW solar photovoltaic array and energy storage system on a portion of the site described above and illustrated on the attached map. The project will consist of ground-mounted solar photovoltaic panels. The construction of the system will involve driving posts approximately 6-10' into the ground, or at depths appropriate for frost conditions, every 12-16' and mounting panels racks to the posts. The solar farm will operate as a Community Distributed Generation (CDG) facility as prescribed by the New York State Public Service Commission under the electric tariffs of Central Hudson Gas and Electric. As a CDG facility, the project will provide clean energy to the existing electric grid operated by Central Hudson and offer local customers the opportunity to contract for this energy at or below current market rates.		
Name of Applicant/Sponsor: Independent Solar, LLC	Telephone: 310-862-0371 E-Mail: paul.irby@ccrenew.com	
Address: 3402 Pico Blvd		
City/PO: Santa Monica	State: California	Zip Code: 90405
Project Contact (if not same as sponsor; give name and title/role): Paul Irby	Telephone: 310-862-0371 E-Mail: paul.irby@ccrenew.com	
Address: 3402 Pico Blvd		
City/PO: Santa Monica	State: California	Zip Code: 90405
Property Owner (if not same as sponsor): Robert Titanic	Telephone: 914-490-8458 E-Mail: rtitanic@bortechinc.com	
Address: 206 Milton Turnpike		
City/PO: Milton	State: New York	Zip Code: 12547

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Negotiation of Pilot Agreement	TBD
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town Planning Board - Special Use Permit and Site Plan Review	July 2020
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Marlboro Central School District - PILOT/IDA Negotiation	TBD
e. County agencies ☑Yes ☐No	Ulster County Planning Department, Ulster County DPW, PILOT/IDA Negotiation	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA - Funding; NYSDEC - SPDES, SHPO	TBD
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
The parcel is zoned as RAG-1, Residential / Agriculture

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Marlboro Central School District

b. What police or other public protection forces serve the project site?
Town of Marlborough Police Department

c. Which fire protection and emergency medical services serve the project site?
Milton Fire Department

d. What parks serve the project site?
Cluett Schantz Memorial Park, Franny Reese State Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Solar electric generation and energy storage (commercial)

b. a. Total acreage of the site of the proposed action? 63.2 acres
b. Total acreage to be physically disturbed? 30 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 30 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 12-16 weeks
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures N/A

ii. Dimensions (in feet) of largest proposed structure: N/A height; N/A width; and N/A length

iii. Approximate extent of building space to be heated or cooled: N/A square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☑No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 1.5 acres (impervious surface)

_____ Square feet or 78 acres (parcel size)

ii. Describe types of new point sources. No new point source discharge; sheet flow only.

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Stormwater will flow off panels to ground and drain as normal to surface water on and around the site. Appropriate stormwater management controls will be implemented during construction.

- If to surface waters, identify receiving water bodies or wetlands: W1, W2, W3, W4, W5, W6; S1, S2, S3 (See wetland & waterbodies report)
- Will stormwater runoff flow to adjacent properties? ☑Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☑Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7 am - 7 pm
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: 24/7
- Saturday: 24/7
- Sunday: 24/7
- Holidays: 24/7

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Noise levels will only exceed ambient levels during construction (12-16 weeks) from use of heavy equipment, including hydraulic pile drivers, excavators, telescopic forklifts, and skid steer loaders. During operation, inverters produce low level noise that will not exceed ambient levels outside the fence line.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: No natural barriers will be removed

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

During facility operation, a limited amount of herbicides may be utilized for vegetation management. Under circumstances where herbicides are deemed necessary, an effort is made to minimize use and to only apply highly biodegradable, EPA registered and approved solutions that are nontoxic to pets and wildlife.

ii. Will the proposed action use Integrated Pest Management Practices? ☑ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: Approx. 18 tons per 12-16 (weeks)
- Operation : 0 tons per N/A (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Wooden pallets from the transport of the solar panels are recycled whenever possible
- Operation: N/A

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Solid waste generated on-site is picked up via dumpster and transported to the landfill used by the dumpster company.
- Operation: N/A

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

No hazardous wastes will be generated by the proposed project.

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☑ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

The immediately surrounding properties consist of residential and mixed-use agriculture/residential properties to the north and east; and a mix of commercial (compost facility) and residential properties to the east, south (houses and cold storage facility), and west (Sportsdome arena).

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	1.5	+1.5
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	1	1	0
• Agricultural (includes active orchards, field, greenhouse etc.)	29	0	-29
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☑ Yes ☐ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☑ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

The project site is located west and up-gradient from the adjacent Custom Compost facility, currently listed as an inactive SWF/LF facility.

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

No development constraints are anticipated because the compost facility is down-gradient from the project site.

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): 9708415, 9205096

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

Spill Number 9708415 was associated with the adjacent property which occurred during a traffic accident, and regulatory closure was granted on October 17, 1997. Spill 9202509 is associated with a leaking agricultural tank, and regulatory closure was granted on August 13, 1992

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 6+ feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Volusia gravelly silt loam (VoB)	24.8 %
Bath gravelly silt loam	42 %
Mardin gravelly silt loam	14.6 %

d. What is the average depth to the water table on the project site? Average: 1.5 feet

e. Drainage status of project site soils:

☑ Well Drained:	51 % of site
☑ Moderately Well Drained:	14.6 % of site
☑ Poorly Drained	34.4+ % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	40.4 % of site
☑ 10-15%:	31.6 % of site
☑ 15% or greater:	28 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name S-1, S-2, S-3 Classification C (S-1)
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name W-1, W-2, W-3, W-4, W-5, W-6 Approximate Size 3.07
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:

White-tailed deer (Odocoileus virginianu	American Black Bear (Ursus americana)	Red fox (Vulpes vulpes)
Raccoon (Procyron lotor)	Striped Skunk (Memphitis mephitis)	Gray squirrel (Sciurus carolinensis)
Eastern coyote (Canis latrans)	American robin (Turdus migratorius)	Red-tailed hawk (Buteo jamaicensis)

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:

i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑ Yes ☐ No

If Yes, provide county plus district name/number: ULST001

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 45.4 (Farmland of Statewide Significance)

ii. Source(s) of soil rating(s): USDA NRCS Web Soil Survey Farmland Classification

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): A Phase IA/IB archeological survey is currently underway to identify any possible resources.

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Esopus/Lloyd SASS; Locust Grove Estate; Franny Reese State Park, Mid-Hudson Bridge, Walk Over Hudson State Hist Park

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): SASS; National Register of Historic Places; OPRHP; NYS Scenic Byways, NY SP

iii. Distance between project and resource: 0.7; 1.6; 2.5; 2.5; 2.7 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Independent Solar, LLC Date 7/8/2020

Signature DocuSigned by: Matthew Bowers 5500B9F2F51946F... Title Authorized Person

PRINT FORM

EAF Mapper Summary Report

Wednesday, April 08, 2020 2:32 PM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	862-392
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No

E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ULST001
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: January 23, 2020
Consultation Code: 05E1NY00-2019-SLI-1949
Event Code: 05E1NY00-2020-E-04233
Project Name: Independent Solar, LLC

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/

eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-1949

Event Code: 05E1NY00-2020-E-04233

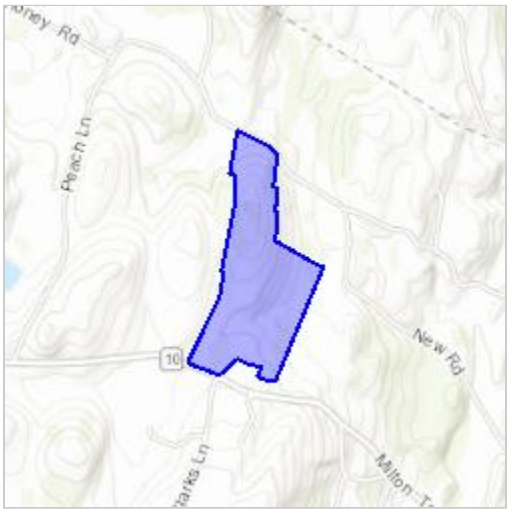
Project Name: Independent Solar, LLC

Project Type: POWER GENERATION

Project Description: Cypress Creek Renewables is requesting to install solar panels on a 67-acre parcel of land in Marlborough, NY for a proposed solar site.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.67107209814155N73.9752083883396W



Counties: Ulster, NY

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5949

Reptiles

NAME	STATUS
Bog Turtle *Clemmys muhlenbergii*	Threatened

Population: Wherever found, except GA, NC, SC, TN, VA
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6962
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/182/office/52410.pdf
Habitat assessment guidelines:
https://ecos.fws.gov/ipac/guideline/assessment/population/182/office/52410.pdf

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

March 11, 2020

Ms. Valerie Mitchell
TRC Companies
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065

Dear Ms. Mitchell:

This is in response to your February 13, 2020, letter and electronic mail regarding the proposed Independent Solar, LLC, Project located in the Town of Marlborough, Ulster County, New York. We understand that no federal funding or permits are anticipated and that you are looking for information on federally listed species in the project area. The U.S. Fish and Wildlife Service (Service) appreciates this opportunity to provide comments on species under our jurisdiction pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Your letter provides a review of potential impacts to the federally listed endangered Indiana bat (*Myotis sodalis*). We agree that "take"[1] of the Indiana bat is not anticipated given the project description (no tree clearing). A phase 1 bog turtle (*Clemmys* [=*Glyptemys*] *muhlenbergii*) report was also submitted to our office for review. The report concludes that the six wetlands found on the project site do not contain suitable habitat for this species. We concur with the report findings and agree that there will be no take of this species as well.

No further coordination with the Service is required pursuant to the ESA for this project. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, please contact us for additional assistance. The most recent compilation of federally listed and proposed endangered and threatened species in New York is available for your information. Until the proposed project is complete, we recommend that you check our website regularly to ensure that listed species presence/absence information for the proposed project is current.*

Any new information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation.

[1] Take is defined in Section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

We appreciate the opportunity to review this project. If you require additional information please contact Tim Sullivan at 607-753-9334.

Sincerely,

for David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at: https://www.fws.gov/northeast/nyfo/es/section7.htm

cc: NYSDEC, New Paltz, NY (Env. Permitting)

10 Maxwell Dr., Suite 200
Clifton Park, NY 12065

T 518.348.1190
TRCcompanies.com

April 30, 2020

New York State Department of Environmental Conservation Region 3
Attn: John Petronella, Regional Permit Administrator
21 South Putt Corners Rd
New Paltz, NY 12561-1620
845-256-3054

Sent online via dep.r3@dec.ny.gov

Subject: Cypress Creek Renewables, LLC
Independent Solar, LLC
Town of Marlborough, Ulster County, New York
Jurisdictional Permitting Information Request

Dear Mr. Petronella,

Cypress Creek Renewables, LLC (CCR) proposes the installation of an approximately 3-megawatt (MW) alternating current (AC) ground-mounted solar system (the Project) on a portion of the Independent Solar, LLC Site (the Project Site). The Project Site is located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York and is within the Poughkeepsie New York United States Geological Survey (USGS) 7.5-Minute Topographic Quadrangle (Figure 1 of Attachment A).

The system will operate as a Community Distributed Generation (CDG) facility as prescribed by the New York State Public Service Commission under the electric tariffs of Central Hudson. The system is designed to meet the size and energy generating requirements of the New York State Energy Research and Development Authority (NYSERDA) Megawatt Block Inventive Program.

The Project will be located on approximately 30 acres of the 76-acre area. Ground disturbance associated with construction of the Project is limited to the installation of the ground-mounted solar system and associated access roads to the Site. A Site Plan is included as Attachment B.

The Project Site is surrounded by a mix of residential, commercial, agricultural, and forested land. The Project Site is primarily active agricultural land, with some fallow areas, situated on two sloping hills. In the center of the Project Site there are several buildings, farm equipment, an excavated foundation, and access roads that traverse the Project Site. There is a small forested area located in the northern boundary of the Site. Six wetlands, totaling 3.07 acres and three streams were identified onsite through a wetland and waterbody delineation on April 29 and 30, 2019 (Figure 2 of Attachment A). There are no New York State Department of Environmental Conservation (NYSDEC) mapped wetlands onsite. Stream S-1 is mapped as a NYSDEC Class C. Streams S-2 and S-3 are not mapped or classified by the NYSDEC. No wetlands or streams

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3054 | F: (845) 255-4659
www.dec.ny.gov

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

June 9, 2020

TRC
Attn: Valerie Mitchell
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065

RE: Independent Solar LLC
Permit Jurisdiction Determination/SEQR Review
Town of Marlborough, Ulster County
DEC ID#: 3-5136-00139/00001

Dear Ms. Mitchell:

The New York State Department of Environmental Conservation (DEC or Department) has reviewed the submitted materials regarding the aforementioned proposed project. Cypress Creek Renewables, LLC is proposing to install an approximately 3-megawatt ground mounted solar array on approximately 30 acres at 206 Milton Turnpike in the Town of Marlborough, Ulster County.

Based upon our review of your inquiry dated April 30, 2020, we offer the following comments:

PROTECTION OF WATERS

The following stream is located within or near the site indicated: a subtributary of the Hudson River, DEC Water Index ID No. H-109-1, Class C, and considered "non-protected."

A Protection of Waters permit is required to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified above as "protected." A permit is not required to disturb the bed or banks of "non-protected" streams. Since this subtributary of the Hudson River is considered "non-protected" at the project location, a Protection of Waters Permit is not required for this project.

If a permit is not required, please note, however, you are still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The identified project site is not within a New York State protected Freshwater Wetland. However, please contact your town officials and the United States Army Corps of Engineers in New York City, telephone (917) 790-8511 (Westchester/Rockland Counties), or (917) 790-8411 (other counties), for any permitting they might require.

WATER QUALITY CERTIFICATION

According to the provided materials (Attachment C, "USACE No Permit Required Letter), no permit is required from the USACOE for this project, "provided that the proposed work is executed in accordance with the referenced material." Should project plans change, and a permit from the ACOE be required, a Section 401 Water Quality Certification may be required from the Department.

STATE-LISTED SPECIES

No records of sensitive resources were identified by this review.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

CULTURAL RESOURCES

We have reviewed the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation. These records indicate that the project is not located within an area considered to be sensitive with regard to archaeological resources. For more information, please visit the New York State Office of Historic Preservation website at http://www.nysparks.com/shpo/.

COASTAL MANAGEMENT ZONE

This project is located within the Coastal Management Zone. If the Department had individual permit approvals for this project, the Department would review it in accordance with Coastal Management Program requirements. For additional information about the Coastal Management Zone, please contact the NYS Department of State, 518-474-6000.

SPDES STORMWATER (CONSTRUCTION)

Please note that if project activities will disturb over 1 acre of land, the project sponsor must obtain coverage under the current SPDES General Permit (GP-0-20-001) for Stormwater Discharge from Construction Activities, and a Stormwater Pollution Prevention Plan (SWPPP) must be developed which conforms to the requirements of the General Permit. As the Town of Marlborough is an MS4 community (Municipal Separate Storm Sewer System), the Town is responsible for review and acceptance of the SWPPP. Please be aware that the MS4 Acceptance Form must be submitted to the Department. Authorization for coverage under the SPDES General Permit is not granted until the Department issues any other necessary DEC permits.

OTHER

Please note that this letter only addresses the requirements for the following permits from the Department: Protection of Waters, State-listed Species, and Freshwater Wetlands. Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under “Programs” then “Division of Environmental Permits.”

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

Katherine Coffin

Katherine Coffin
Division of Environmental Permits
Region 3, Telephone No. (845) 256-3158

Cc: Jason Funk, CCR

NOTE: Regarding erosion/sedimentation control requirements:
Stormwater discharges require a State Pollutant Discharge Elimination System (SPDES) Stormwater permit from this Department if they either:

- occur at industrial facilities and contain either toxic contaminants or priority pollutants OR
- result from construction projects involving the disturbance of 5000 square feet or more of land within the NYC Department of Environmental Protection East of Hudson Watershed or for proposed disturbance of 1 acre or more of land outside the NYC DEP Watershed

Your project may be covered by one of two Statewide General Permits or may require an individual permit. For information on stormwater and the general permits, see the DEC website at http://www.dec.ny.gov/chemical/8468.html.
For construction permits, if this site is within an MS4 area (Municipal Separate Storm Sewer System), the stormwater plan must be reviewed and accepted by the municipality and the MS-4 Acceptance Form must be submitted to the Department. If the site is not within an MS4 area and other DEC permits are required, please contact the regional Division of Environmental Permits.

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

ARCHAEOLOGY COMMENTS

Phase IA/IB Archaeological Survey Recommendation for Solar Farms

Project: Independent Solar Project / 31 Acres
Town/County: Town of Marlborough, Ulster County
PR#: 20PR01044
Date: 2 March 2020

We have determined that this project area is archaeologically sensitive. Therefore, the New York State Office of Parks, Recreation and Historic Preservation and its State Historic Preservation Office (OPRHP) recommends that a Phase IA/B archaeological survey is warranted and offers the following survey guidance. A Phase IA/IB survey is designed to determine the presence or absence of archaeological sites or other cultural resources in the project's Area of Potential Effects (APE).

Phase IB archaeological testing is recommended for areas of substantial proposed ground disturbance, which includes areas of grading, grubbing, tree removal, and any excavations more than one foot wide and more than six inches deep.

Phase IB archaeological testing is not recommended for panel arrays, perimeter fencing and utility poles if their associated posts are driven or drilled into the ground and no grubbing or grading is involved. However, if the installation of the panel array supports, fencing or utility poles requires grubbing and grading then Phase IB archaeological testing is recommended.

If you consider the project area to be disturbed, documentation of the disturbance will need to be reviewed by OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition. Documentation of ground disturbance typically consists of soil bore logs, photos, or previous project plans.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA/IB survey.

If you have any questions concerning archaeology, please contact Philip Perazio at 518-268-2175 or Philip.perazio@parks.ny.gov.

Comments regarding architectural resources are being provided separately.

WETLAND AND WATERBODY DELINEATION REPORT
INDEPENDENT SOLAR, LLC PROJECT

206 MILTON TURNPIKE
TOWN OF MARLBOROUGH
ULSTER COUNTY, NEW YORK

Prepared For:
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May 2019

Table of Contents

TABLES

APPENDICES

1.0 INTRODUCTION

1.1 Project Description and Purpose

Cypress Creek Renewables, LLC (CCR) is proposing to construct a ground-mounted solar Project on a portion of the Independent Solar, LLC Site (the Project Site). The Project Site is approximately 75.8 acres in size and is located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York (see Figure 1).

1.2 Report Purpose

TRC Companies, Inc. (TRC) has conducted a wetland and waterbody delineation of the Project Site on behalf of CCR on April 29 and 30, 2019. This report details the wetlands and surface waters within the Project Site (including rivers, waterbodies, ponds, and lakes), regardless of jurisdictional status. However, this report's description of potential jurisdictional areas to regulatory agencies lends itself toward assessing jurisdiction and avoiding wetlands and surface waters by implementing setbacks (both required by the state and CCR's internal process) during Project planning, to the extent practical.

Delineation efforts included the following tasks:

1. A desktop review of existing publicly available federal and state agency resources;

2. A field delineation of all aquatic features within the Project Site using a handheld Global Positioning System (GPS) with reported sub-meter accuracy; and,

3. Documentation of the delineated aquatic features including the assumed agency jurisdiction for each resource based on hydrology, vegetation, and hydric soils data collected in the field.

Conclusions proposed herein provide information necessary to support a permit application to the United States Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC).

2.0 REGULATORY AUTHORITY

2.1 United States Army Corps of Engineers

In accordance with Section 404 of the Clean Water Act, the USACE asserts jurisdiction over Waters of the United States (WOTUS). WOTUS are defined as wetlands, waterbodies, and other aquatic resources under the regulatory authority of Title 33 Code of Federal Regulations (CFR) Part 328 and the United States Environmental Protection Agency (EPA), per Title 40 CFR Part 230.3(s). Wetlands are defined as "*those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (33 CFR 328.3[c]).

2.1.1 Historical Context

On June 5, 2007, the EPA and the Department of Army issued a memorandum outlining jurisdictional guidance on WOTUS. The document outlined major key points resulting from the United States Supreme Court decision in the matter of *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* (531 U.S. 159, January 9, 2001) and *Rapanos v. United States* (547 U.S. 715, June 19, 2006). This document defined the following:

The USACE will assert jurisdiction over the following waters:

- Traditional navigable waters, which are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce, or are "navigable-in-fact;"
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (i.e., typically three months); and
- Wetlands that directly abut such tributaries.

The USACE will decide jurisdiction over the following waters based on an analysis to determine whether they have significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The USACE generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and
- The significant nexus includes consideration of hydrologic and ecologic factors.

2.1.2 Current Status

On August 28, 2015, the EPA released the Clean Water Rule (33 CFR Part 328) intending to clarify the scope of the Clean Water Act (CWA), WOTUS, and definitions of significant nexus. However, on October 9, 2015, implementation of the Clean Water Rule was stayed by the Sixth Circuit Court of Appeals pending further action of the court. On August 16, 2018, the U.S. District Court for the District of South Carolina enjoined the delay of the Clean Water Rule. Therefore, the Clean Water Rule became in effect in 22 states, including New York.

Under the Clean Water Rule, the USACE will assert jurisdiction over the following waters:

- Waters within 100 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary;
- Waters within the 100-year floodplain up to a maximum of 1,500 feet from the ordinary high water mark (OHWM); and
- Waters within 1,500 feet of the high-tide line.

Under the Clean Water Rule, the USACE will decide jurisdiction over the following waters (if not already deemed jurisdictional by Rule) based on an analysis to determine whether they have significant nexus:

- Waters categorically “similarly situated” such as prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands;
- Waters within the 100-year floodplain more than 1,500 feet from the OHWM; and

- Waters within 4,000 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary.

The USACE also regulates navigable waters under Section 10 of the Rivers and Harbor Act (33 U.S.C. 401 et seq.), which requires a permit be issued by the USACE prior to the construction of any structure in or over a navigable water of the United States, as well as any proposed action (such as excavation/dredging or deposition of materials) that would affect the course, location, condition, or capacity of the navigable water, even if the proposed activity is outside the boundaries of the waterbody in associated wetlands.

2.2 New York State Department of Environmental Conservation

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law [ECL]) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas, typically extending 100 feet from the wetland perimeter. To implement this Act, regulations were promulgated by the State under 6NYCRR Parts 663 and 664. Part 664 designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest. Wetlands regulated by the State are those 12.4 acres (5 hectares) in size or larger, as well as those smaller than 12.4 acres, deemed to be of "unusual local importance." The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands. This allows landowners and other interested parties a means of determining where state jurisdictional wetlands exist, although the maps are legally only approximations—thus the need for on-site delineations. Under Part 663, approval under an Article 24 permit is required from the NYSDEC prior to most disturbances to a state-protected wetland or its protected adjacent area, including the removal of vegetation.

Article 15 of the ECL (Protection of Waters), and its implementing regulations under 6 NYCRR Part 608, provides the NYSDEC with regulatory jurisdiction over activities disturbing the bed or banks of protected waterbodies, including small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected waterbody. This law and regulation also provide NYSDEC jurisdiction over navigable waters of the State, including contiguous marshes, estuaries, tidal marshes and wetlands that are inundated at mean high water level or tide, A protected waterbody is defined in the ECL as any waterbody, or particular portion of a waterbody, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, C(T), or C(TS) (6 NYCRR Part 701). State water quality classifications of unprotected watercourses include Class C and Class D waterbodies. The classifications are defined below.

- A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing.

- The best usages of Class B waters are primary and secondary contact recreation and fishing.

- The best usage of Class C waters is fishing. Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

- Waters with a classification of D are generally suitable for fishing and non-contact recreation.

It should be noted, per 6 NYCRR Chapter X, Subchapter B, "*All waterbodies or other bodies of water which are not shown on the reference maps herein shall be assigned to Class D, as set forth in Part 701, supra, except that any continuous flowing natural waterbody which is not shown on the reference maps shall have the same classification and assigned standards as the waters to which it is directly tributary.*"

3.0 PROJECT SITE CHARACTERISTICS

3.1 Resources

The following publicly available resources were used in the investigation, delineation, and report preparation:

- United States Geological Survey (USGS) Poughkeepsie New York 7.5 minute quadrangle;
- United States Department of Agriculture (USDA) Ecoregion Maps;
- NYSDEC Ecozone Mapping;
- USGS National Hydrography Dataset;
- USGS Hydrologic Unit Maps;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 36111C0790E, effective 9/25/2009;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- NYSDEC Environmental Resource Mapper (ERM);
- NYSDEC Freshwater Wetlands Mapping;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey; and
- Recent aerial orthoimagery.

3.2 Vegetation and Ecological Communities

The Project Site resides in the Eastern Broadleaf Forest (Oceanic) Province and Hudson Valley Section ecoregion of the United States as defined by the USDA Forest Service (Bailey et al., 1995). Ecoregions are ecosystems of regional extent. The USDA identifies ecoregions by ecosystem characteristics into the following classifications:

- Domains: the largest ecosystem, which are groups of related climates and are differentiated based on precipitation and temperature.
- Divisions: represent the climates within domains and are differentiated based on precipitation levels and patterns, as well as temperature.

- Provinces: Subdivisions of divisions, which are differentiated based on vegetation or other natural land covers.

- Sections: Subdivisions of provinces based on terrain features, sections are the finest level of detail is described for each subregions.

- Mountainous Areas: Mountainous regions that exhibit different ecological zones based on elevation.

The Eastern Broadleaf Forest (Oceanic) Province consists of topography formed by the Appalachian Mountains and glaciation. Altitudes range from sea level to approximately 3,000 feet above sea level. Average precipitation ranges from 35 to 60 inches, and average annual temperatures range from 40 to 60 degrees Fahrenheit. This province is comprised predominantly of temperate deciduous forest, with the occasional pine-oak, Appalachian, or mixed mesophytic forests. The temperate deciduous forests are dominated by tall broadleaf trees, and contain weakly developed lower layers of small trees and shrubs (Bailey et al., 1995).

The Hudson Valley Section consists of linear lowlands of a glacial lake plain bordered by tall escarpments. The bedrock is a combination of carbonates, shales, siltstones, and sandstones, with some sections of metasediments and metavolcanics. The vegetation is a combination of maple-beech-birch, oak-hickory, and aspen-birch cover types (McNab et al., 2007).

Similarly, the NYSDEC has divided New York State into specific ecological regions (Ecozones). Boundaries of the Ecozones of New York State were derived from Will et al. (1982) and Dickinson (1983) and then further modified by the NYSDEC. The Ecozones of New York State have been classified into Major and Minor Zones. The Project Site is located within Hudson Valley Major Zone and the Central Hudson Minor Zone.

The Hudson Valley Major Zone consists of a complex of hills and terraces underlain with highly folded sedimentary rock. Elevations range from near sea level to approximately 500 feet above sea level in most of the zone. The soils tend to be medium textured, acidic, and contain fragipans in much of the zone. The zone is within the oak-northern hardwood vegetation zone. Annual temperature typically varies between 25 and 75 degrees Fahrenheit, and there is typically 40 to 60 annual inches of snowfall. The growing season is 160 to 180 days long (Will *et al*., 1982).

The Central Hudson Minor Zone consists of flat to rolling land. Elevations are generally less than 500 feet above sea level but some hilltops can exceed 1,000 feet. Northern and pioneer hardwoods are the most extensive forest types in this zone. The economy is based on a combination of industry, residential centers, and agriculture (Will *et al.*, 1982).

Recent aerial orthoimagery of the Project Site and surrounding vicinity indicates that the Project Site is covered primarily by agricultural (primarily row crops and hay fields) land, farm buildings, forest edges and successional shrubland. Older aerial orthoimagery shows that the Project Site used to be an orchard. The following ecological communities, as defined by *Ecological*

Communities of New York State (Edinger et al., 2014), were identified on the Project Site at the time of the delineation:

- Intermittent Stream
- Confined River
- Ditch/artificial intermittent stream
- Riverine Submerged Structure
- Farm Pond or Artificial Pond
- Common reed marsh
- Shallow Emergent Marsh
- Shrub Swamp
- Successional Old Field
- Successional Shrubland
- Cropland/Field Crops
- Cropland/Row Crops
- Unpaved Road/Path
- Rural Structure Exterior
- Basement/Building Foundation
- Construction/Road Maintenance Spoils

3.3 Hydrology

3.3.1 Hydrologic Mapping

The USGS has divided and sub-divided the country into hydrologic units based primarily on drainage basins and watershed boundaries. The main hydrologic unit levels are regions, sub-regions, basins, sub-basins, watersheds, and sub-watersheds. The hydrologic units are nested within each other, from the largest geographic area (regions) to the smallest geographic area (sub-watersheds). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits based on the six levels of classification in the hydrologic unit system. In addition to the hydrologic unit codes, each hydrologic unit is assigned a name corresponding to the unit's principal hydrologic feature, or to a cultural or political feature within the unit.

The region hydrologic unit level contains either the drainage area of a major river or the combined drainage areas of a series of rivers. Regions receive a two-digit code. The following hydrologic unit levels are designated by the addition of another two digits with each level. Each sub-region includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin or basins, or a group of waterbodies forming a coastal drainage area.

The Project Site is located within the USGS defined Hudson-Wappinger sub-basin (HUC 02020008), Hudson-Landsman Kill watershed (HUC 0202000801), and the Twaalfskill Creek-Hudson River sub-watershed (HUC 020200080106).

The Hudson-Wappinger sub-basin is located in the southeastern portion of New York State straddling the Hudson River, just north of the New York City. It contains the Hudson River, and is 604,602 acres in size. Average annual precipitation typically ranges from 40 to 52 inches. The sub-basin ranges in elevation from -7 to 1,663 feet above sea level. Urban areas comprise 28 percent of the watershed according to the 2000 US Census. There are approximately 700 farms, most of which are small in size. Crop land is used primarily to grow hay and corn (USDA NRCS, 2009).

The NYSDEC also classifies watersheds more generally within the State of New York. Unlike mapping efforts outlined by the USGS above, the NYSDEC uses the definitions of watersheds and drainage basins interchangeably. New York's waters (e.g., lakes, rivers, wetlands, and waterbodies) fall within one of seventeen major drainage basins as defined by the NYSDEC. The NYSDEC defines these drainage basins or watersheds as an area of land that drains water into a specific body of water within or adjacent to New York State and includes networks of rivers, waterbodies, lakes, and the surrounding lands. The NYSDEC-classified watersheds are separated by high elevation geographic features (e.g., mountains, hills, and ridges). Each major drainage basin corresponds to one or more USGS sub-basins (USGS HUC 8-digit codes).

The Project Site is located within the Lower Hudson River major drainage basin of New York. This major drainage basin is approximately 3,188,480 acres in size within New York State. It contains 8,861 miles of freshwater rivers and waterbodies, and 324 significant freshwater lakes, ponds, and reservoirs. There are 153 miles of tidal estuary along the lower Hudson River (NYSDEC, Lower Hudson Watershed). Within this major drainage basin, the Project is located in the Hudson-Wappinger sub-basin as previously mentioned.

3.3.2 Hydrologic Character

The predominant surface waterbodies within the Project Site are both Waterbody S-1, labeled as Minor Tributaries to West of Hudson, and Wetland W-3, a pond in the eastern portion of the Project Site. Most aquatic features within the Project Site are in close proximity to Waterbody S-1, with likely connections to it in the form of direct flow, groundwater discharge/recharge, or overland flow.

The Project Site receives, on average, approximately 44 inches of rainfall annually based on information for the City of Poughkeepsie, New York, located approximately two miles northeast of the Project Site (U.S. Climate Data, 2019).

Hydrology within the Project Site primarily originates from the southwest and drains to the northeast. On-site hydrological conditions observed during the delineation included moist soil and puddles due to recent rains.

3.3.3 FEMA Flood Zone Mapping

FEMA maintains materials developed to support flood hazard mapping for the National Flood Insurance Program (NFIP). According to FIRM panel 36111C0790E, effective 9/25/2009, the Project Site is not located within a flood zone (see Figure 3).

3.4 Federal and State Mapped Wetlands and Waterbodies

The USFWS is the principal US federal agency tasked with providing information to the public on the status and trends of wetlands on a national scale. The USFWS NWI is a publicly available resource that provides detailed information on the abundance, characteristics, and distribution of nationwide wetlands (where mapped). NWI mapping data is offered in an effort to promote the understanding, conservation, and restoration of wetlands. Note, unlike NYSDEC wetland maps, NWI wetland maps do not denote federal jurisdiction with their mapped boundaries. NWI wetlands are used as a reference guide by TRC field biologists to conduct a more informed site survey in the demarcation or delineation of wetlands and waterbodies, which could be subject to federal jurisdiction under the CWA within the target Project Site.

Review of the NWI mapping during the preliminary desktop analysis indicated four federally mapped features within the Project Site, totaling approximately 4.5 acres (see Figure 3). NWI mapping data indicates that riverine aquatic features are the dominant NWI features present within the Project Site. These features comprise a total of approximately 3.8 acres. Other common cover types include palustrine unconsolidated bottom (PUB) (0.5 acre) and palustrine emergent (PEM) (0.1 acre).

The TRC field-delineated aquatic features within the Project Site loosely coincide with the features represented by the NWI mapping for the Project Site. However, the majority of the R4SBC riverine feature is north of where it is shown on NWI mapping. Additionally, the NWI feature labeled PEM1F was not observed during the wetland delineation. The area in which it is mapped as an NWI wetland was likely filled in the past in association with farming and agriculture activities. Farm related materials and equipment were observed at this location. Soils, hydrology, and vegetation in this location did not meet the conditional requirements of a wetland. In addition, the southern portion of R4SBC was observed to have been filled in. Water from that feature had been historically diverted to the ditch which comprises the southern portion of Waterbody S-1 and now Wetland W-1 remains where the natural stream used to traverse. Lastly, some additional aquatic features also occur within the Project Site outside of boundaries indicated by the NWI mapping, including Waterbodies S-2 and S-3, and Wetlands W-2, W-4, W-5, and W-6.

Review of the NYSDEC ERM indicated that there are no NYSDEC freshwater wetlands or 100-foot adjacent areas mapped within the Project Site. The closest NYSDEC-regulated wetlands are located approximately 0.2 mile to the northwest, 0.5 mile to the west, and 0.5 mile to the southeast (see Figure 3).

Based on NYSDEC waterbody classification mapping, one waterbody is mapped within the Project Site. State-protected waterbodies are protected per Article 15 of the ECL (see Section 2.2). Since it is mapped as a Class C waterbody, it is not considered to be protected by the NYSDEC. This NYSDEC Class C stream coincides with the mapped riverine NWI feature. Similar to the NWI features previously mentioned, this stream is mapped slightly south of where the actual physical field verified stream is located and has been diverted to the north in the southwestern section. Wetland W-1 remains where this stream likely used to flow through. Table 1 below provides a detailed summary of the NYSDEC-classified unprotected waterbody within the Project Site.

Table 1. NYSDEC Mapped Waterbody within the Project Site

NYSDEC Waterbody Name and Regulatory ID Number	NYS Major Drainage Basin	USGS Sub-basin HUC 8 and Name	NYSDEC Classification[1] and Standard[2]	Cumulative Linear Feet within the Project Site
Minor Tributaries to West of Hudson (862-392)	Lower Hudson River	Hudson-Wappinger sub-basin (HUC 02020008)	Class C	2,048.3

[1]A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Waters with a classification of D are generally suitable for fishing and non-contact recreation.
[2]Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

3.5 Physiography and Soil Characteristics

3.5.1 Physiography and Topography

The Project Site is located within the Hudson-Mohawk Lowlands Physiographic Province of New York State (New York State Department of Transportation, 2013). This Physiographic Province is bound by uplands everywhere except for two small portions. The central lowland portion consists of a valley on both sides of the Hudson River (NYSDOT, 2013). The landforms of the Project Site are hills and valleys.

As shown on the USGS Poughkeepsie NY 7.5-minute quadrangle, the topography is gently to moderately sloped (approximately 8 to 15 percent slopes) within the Project Site (Figure 1). The topography in the majority of the Project slopes toward the waterbody that traverses the center of the Project Site (Waterbody S-1), with the northern section of the Project generally sloping to the southeast and the southern portion of the Project generally sloping to the northeast. The topography ranges from approximately 330 feet above mean sea level (AMSL) in the eastern

portion of the Project Site in the waterbody valley, to approximately 470 feet AMSL in the northern portion, atop the tallest hill. Despite the presence of sections of steeper terrain, the average slope across the entire Project Site is approximately six percent, and the Project Site topography as a whole would be considered moderately sloping.

3.5.2 Site Soils

The USDA NRCS Web Soil Survey is an online resource mapping tool that provides soil data and information for the vast majority of the nation. This information is produced by the National Cooperative Soil Survey (NCSS), in partnership with federal, regional, state, and local agencies and private entities and institutions.

A total of eleven soil map units were identified within the Project Site. Soil map units represent a type of soil, a combination of soils, or miscellaneous land types. Soil map units are usually named for the predominant soil series or land types within the map unit. Due to limitations imposed by the small scale of the soil survey mapping, it is not uncommon to identify wetlands within areas not mapped as hydric soil, while areas mapped as hydric often do not support wetlands. This concept is emphasized by the NRCS:

"*Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.*"

Soil drainage in the Project Site is variable, with approximately 44 percent of the mapped soils classified as well drained, 14 percent classified as moderately well drained, 4 percent classified as somewhat excessively drained, 37.2 percent classified as somewhat poorly drained, and 0.6 percent classified as very poorly drained. Additionally, 73.2 percent of soils within the Project Site have been listed as a farmland classification of farmland of statewide importance, 0.1 percent as prime farmland, and 26.8 percent as not prime farmland.

The eleven soil map units identified within the Project Site by the NRCS are briefly described below and outlined in Table 2. Refer to Figure 2 for graphically depicted soil map units of the Project Site.

Soil Descriptions

Atherton silt loam (At) – A very small portion of this poorly drained soil is mapped in the easternmost portion of the Project Site. It is composed of 80 percent Atherton and similar soils and is found in depressions. The minor components of this soil unit are made up of Red hook, Raynham, Canandaigua, and Lamson soils, making up 5 percent each of the map unit. This map unit has a hydric rating of 90 percent.

Bath gravelly silt loam, 8 to 15 percent slopes (BgC) – This well drained soil is mapped in the central and northern portions of the Project Site. It is composed of 80 percent Bath and similar soils and is found on drumlinoid ridges, hills, and till plains. Lordstown soils, Manlius soils, Mardin

soils, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath gravelly silt loam, 15 to 25 percent slopes (BgD) – This well drained soil is mapped in the central and northern portions of the Project Site. It is composed of 75 percent Bath and similar soils and is found on hills, till plains, and drumlinoid ridges. Lordstown soils, Manlius soils, Mardin soils, Rock outcrops, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath-Nassau complex, 8 to 25 percent slopes (BnC) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 50 percent Bath (a well drained soil) and similar soils and is found on hills, till plains, and drumlinoid ridges. It is also composed of 30 percent Nassau (a somewhat excessively drained soil) and similar soils and is found on benches, ridges, and till plains. Cambridge soils, Manlius soils, Volusia soils, and Hudson soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath-Nassau-Rock outcrop complex, hilly (BOD) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 40 percent Bath (a well drained soil) and similar soils and is found on hills, till plains, and drumlinoid ridges. It is also comprised of 25 percent Nassau (a somewhat excessively drained soil) and similar soils, and is found on benches, ridges, and till plains. Rock outcrops comprises 15 percent of the map unit as well. Hudson soils, Manlius soils, Mardin soils, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Canandaigua silt loam, till substratum (Cd) – A small portion of this very poorly drained soil is mapped in the northern portion of the Project Site. It is composed of 80 percent Canandaigua and similar soils and is found in depressions. Raynham, Lamson, Lyons, and Atherton soils make up 5 percent each of the map unit as the minor components. This map unit has a hydric rating of 95 percent.

Castile gravelly silt loam, 0 to 3 percent slopes (CgA) – A small portion of this moderately well drained soil is mapped in the easternmost portion of the Project Site. It is composed of 80 percent Castile and similar soils and is found in valley trains and terraces. Chenango soils, Red hook soils, Tunkhannock soils, and Hoosic soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Mardin gravelly silt loam, 3 to 8 percent slopes (MdB) – This moderately well drained soil is mapped in the southeastern portion and north central portion of the Project Site. It is composed of 85 percent Mardin and similar soils and is found on hills and mountains. Bath soils, Volusia soils, and Lordstown soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Mardin-Nassau complex, 3 to 8 percent slopes (MgB) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 55 percent Mardin (a moderately well

drained soil) and similar soils and is found on hills and mountains. It is composed of 25 percent Nassau (a somewhat excessively drained soil) and similar soils and is found on benches, ridges, and till plains. Volusia soils, found on hills and mountains, Churchville soils, found in lake plains and till plains, Manlius soils, found in till plains, and on benches and ridges, and Schoharie soils, found in lake plains, each make up 5 percent of the map unit. This map unit has a hydric rating of 0 percent.

Volusia gravelly silt loam, 3 to 8 percent slopes (VoB) – This somewhat poorly drained soil is mapped in the southern and central portions of the Project Site. It is composed of 90 percent Volusia and similar soils and is found on hills and mountains. Mardin soils, found on hills and mountains, and Chippewa soils, found in depressions, make up 5 percent each of the map unit. This map unit has a hydric rating of 5 percent.

Volusia gravelly silt loam, 8 to 15 percent slopes (VoC) – This somewhat poorly drained soil is mapped in the northern portion of the Project Site. It is composed of 90 percent Volusia and similar soils and is found on hills and mountains. Mardin soils, found on hills and mountains, make up 6 percent of the map unit. Chippewa soils, found in depressions, make up 4 percent of the map unit. This map unit has a hydric rating of 4 percent.

Hydric Soil

The Web Soil Survey of the Project Site was consulted prior to conducting the delineation to determine the extent of soils meeting hydric criteria as defined by the NRCS. The *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratories, 1987) (1987 Manual) defines a hydric soil as "*a soil that in its undrained condition, is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.*"

Of the Project soils, two of the soils mapped within the Project Site contain higher percentages (33 percent or more) of mapping units with hydric soil inclusions (see Figure 2). These higher rating percentages indicate the potential presence of a wetland feature on the Project Site. Hydric Soil Rating indicates the percentage of map units that meet the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor non-hydric components in the higher positions on the landform, and map units that are made up dominantly of non-hydric soils may have small areas of minor hydric components in the lower positions on the landform. As such, each map unit is rated based on its respective components and the percentage of each component within the map unit. Although a soil series will be given a general hydric soil rating on the Web Soil Survey, this rating is for reference only and does not supersede site-specific conditions documented in the field that constitute hydric soil presence in located wetlands.

Table 2. Mapped Soils within the Project Site

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Site	Percent of Project Site (%)
At	Atherton silt loam	0 to 2	Poorly drained	90	0.0	0.0
BgC	Bath gravelly silt loam	8 to 15	Well drained	0	15.0	19.8
BgD	Bath gravelly silt loam	15 to 25	Well drained	0	12.0	15.9
BnC	Bath-Nassau complex	8 to 25	Well drained/Somewhat excessively drained	0	6.0	7.9
BOD	Bath-Nassau-Rock outcrop complex, hilly	10 to 25	Well drained/Somewhat excessively drained	0	2.3	3.0
Cd	Canandaigua silt loam, till substratum	0 to 1	Very poorly drained	95	0.5	0.6
CgA	Castile gravelly silt loam	0 to 3	Moderately well drained	0	0.0	0.1
MdB	Mardin gravelly silt loam	3 to 8	Moderately well drained	0	9.2	12.2
MgB	Mardin-Nassau complex	3 to 8	Moderately well drained/Somewhat excessively drained	0	2.5	3.4
VoB	Volusia gravelly silt loam	3 to 8	Somewhat poorly drained	5	22.8	30.1
VoC	Volusia gravelly silt loam	8 to 15	Somewhat poorly drained	4	5.4	7.1

4.0 DELINEATION METHODOLOGY

Prior to initiating field investigations, TRC conducted a desktop review of publicly available data to determine the potential presence of federal and state mapped wetlands and waterbodies within the Project Site alongside other potential environmental constraints, which could potentially impact the Project. TRC field biologists subsequently performed field investigations to identify aquatic features within the Project Site. Delineations for wetlands and waterbodies were performed in accordance with criteria set forth in the 1987 Manual (Environmental Laboratory, 1987) and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (USACE, 2012) (Supplement). Data was collected from a sample plot in each delineated wetland. Based on a change in cover type, multiple sample plots were taken of one of the delineated wetlands. Delineation data was recorded on USACE Routine Wetland Determination Forms (Appendix C). The boundaries of wetlands were demarcated with pink survey ribbon labeled “wetland delineation” and located with a GPS unit during the time of the delineation with reported sub-meter accuracy.

4.1 Hydrology

The presence of wetland hydrology is determined based on primary and secondary indicators established by the USACE. The 1987 Manual defines the presence of wetland hydrology when at least one primary indicator or two secondary indicators are identified. One primary indicator is sufficient to determine if hydrology is present; however, if primary indicators are absent, two or more secondary indicators are required to determine the presence of wetland hydrology. If other probable wetland hydrology evidence was found on-site, then such characteristics were subsequently documented on the USACE Routine Wetland Determination Form. Wetland hydrology indicators are grouped into 18 primary and 11 secondary indicators as presented in the Supplement.

Wetland hydrology may influence the characteristics of vegetation and soils due to anaerobic and reducing conditions (Environmental Laboratory, 1987). This influence is dependent on the frequency and duration of soil inundation or saturation which, in turn, is dependent on a variety of factors including topography, soil stratigraphy, and soil permeability, in conjunction with precipitation, runoff, and stormwater and groundwater influence.

4.2 Vegetation

Hydrophytic vegetation is defined in the 1987 Manual as:

“*…the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.*”

Plants are categorized according to their occurrence in wetlands. Scientific names and wetland indicator statuses for vegetation are those listed in *The National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al., 2016) (NWPL). Due to regional differences in wetland vegetation, among other characteristics, the USACE divided the United States into regions to improve the accuracy and efficiency of wetland delineations. The indicator statuses specific to the "Northcentral and Northeast Region," as defined by the USACE, apply to the Project Site. The official short definitions for wetland indicator statuses are as follows:

- Obligate Wetland (OBL): Almost always occur in wetlands.
- Facultative Wetland (FACW): Usually occur in wetlands but may occur in non-wetlands.
- Facultative (FAC): Occur in wetlands and non-wetlands.
- Facultative Upland (FACU): Usually occur in non-wetlands but may occur in wetlands.
- Upland (UPL): Almost never occur in wetlands.

For species with no indicator status in the Project Site's region, the indicator status assigned to the species in the nearest adjacent region is applied. Plants that are not included on the NWPL within the Project Site's region, nor an adjacent region, are given no indicator status, and are not included in dominance calculations. Plants that are not listed in any region on the NWPL are considered as UPL on USACE Routine Wetland Determination Forms.

Vegetation in both upland and wetland communities was characterized using areal methods for instituting plot measurement. In accordance with USACE methodology, a plot radius of 30 feet around the soil sample location was applied to tree species and vines, a 15-foot radius for saplings/shrubs, and a 5-foot radius was utilized for herbaceous plants. After the measurement of percent coverage was determined for each species, an application of the 50/20 rule of dominance determination was utilized to determine hydrophytic dominance at sample plots. In using the 50/20 rule, the plants that comprise each stratum are ranked from highest to lowest in percent cover. The species that cumulatively equal or exceed 50 percent of the total percent cover for each stratum are dominant species, and any additional species that individually provides 20 percent or more percent cover are also considered dominant species of its respective strata. The total cover for each stratum, and subsequently the plot as a whole, could exceed 100 percent due to vegetation overlap.

Cover types are also assigned to each wetland. The delineated resources were classified in accordance with the system presented in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (Federal Geographic Data Committee [FGDC], 2013). Field biologists assign cover types to wetlands based on this classification standard and utilize this document. TRC biologists used the definitions for perennial and intermittent waterbodies found in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (FGDC, 2013) when classifying delineated waterbodies. Ephemeral waterbodies have flowing water primarily from rainfall runoff and are above the water table.

4.3 Soils

Hydric soil indicators were determined utilizing the Supplement with added provision from the *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils*, Version 8.2 (USDA NRCS, 2018). Soil characteristics were documented, such as color, texture, layer depth, presence of organic layers, and evidence of redoximorphic features, which may include indicators such as reduction, oxidation, gleyed matrices, manganese features. Soil test pits were dug using a spade shovel to a depth of approximately 20 inches. If refusal of a soil sample to 20 inches occurred due to the presence of hardpan layer, rock, or hard fill materials, this occurrence was documented. Soil color was described using the *Munsell Soil Color Book* (Munsell Color, 2015). Texture was determined using the USDA feel method (Thien, 1979).

Hydric soil indicators applicable to the Project Site were determined using the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (NRCS, 2006) (MLRA Handbook). Per the MLRA Handbook, the Project Site is within Major Land Resource Area 144A (New England and Eastern New York Upland, Southern Part) of Land Resource Region (LRR) R (Northeastern Forage and Forest Region). Hydric soil indicators that do not apply to this MLRA were not considered.

4.4 Waterbodies

Waterbodies and other non-wetland aquatic features (e.g., lakes and ponds) within the Project Site were identified by the presence of an OHWM, which is the line established by the fluctuations of water (33 CFR 328.3). The OHWM, where not established and available by public record, is indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other characteristics of the surrounding areas.

The waterbodies were delineated from bank to bank with blue flagging and points of the delineated boundaries were located with a handheld GPS unit set for sub-meter accuracy. In waterbodies less than 6 feet wide, sub-meter GPS point capture and post-processing (differential correction) may yield imprecise waterbody bank measurements due to the narrow nature of the waterbody. In these circumstances, centerline delineations are applied to maintain accurate representation of waterbody sinuosity for planning and impact calculation purposes. Waterbody attributes including width, bank height, and water depth are measured and documented on TRC Stream Inventory Data Forms (Appendix C).

5.0 RESULTS

5.1 General Overview

The Project Site contains primarily agricultural fields. At the time of the survey these fields had likely not yet been planted, but some fields were recently tilled, while others where mounded with black plastic. In addition to the agricultural fields, there are several buildings, numerous pieces of equipment, an excavated foundation, (all accessed by a gravel road) closer to the southern portion of the Project Site, and old successional shrubland in the northern section of the Project Site. There is limited forested habitat within the Project Site and it is primarily found along the northern boundary of the Project Site. The trees in this area were dominated by willow species, quaking aspen (*Populus tremuloides*), green ash (*Fraxinus pennsylvanica*), apple trees (*Malus spp.*), silky dogwood (*Cornus amomum*) and red osier dogwood (*Cornus sericea*). The estimated average diameter at breast height (DBH) of the trees ranged from 2 to 12 inches, with a few trees attaining DBH measurements of over 36 inches. Dominant vegetation within the non-forested sections of the Project Site included Kentucky blue grass (*Poa pratensis*), goldenrod (*Solidago spp.*) ragweed (*Ambrosia spp.*), purple loosestrife (*Lythrum salicaria*), forbs, grapevines (*Vitis spp.*), and poison ivy (*Toxicodendron radicans*).

In the month of April 2019, 4.32 inches of rain fell in nearby Poughkeepsie NY. It had rained in the days leading up to the delineation, which could have attributed to higher water levels in the waterbodies as well as wet fields. During the delineation, weather conditions ranged from overcast with a light drizzle to mostly sunny.

TRC identified and delineated six wetlands and three waterbodies within the Project Site on April 29 and 30, 2019 (see Figure 4 and Figure 5). Approximately 4.0% (3.07 acres) of the approximately 78.5-acre Project Site is classified as wetland. Tables 3 and 4 below detail the wetlands and waterbodies delineated at the Project Site.

5.2 Delineated Wetlands

Wetland W-1 is a 0.34-acre PEM wetland located in the southwestern portion of the Project Site, near the buildings. This wetland continues off-site to the west, where hydrology likely originates from the Minor Tributaries to West of Hudson (S-1 offsite). This wetland was likely formed after the stream (mapped as an NWI feature and NYSDEC Class C stream) that originally flowed through this area, was diverted to the north. This wetland is therefore likely under USACE jurisdiction. Indicators of wetland hydrology include surface water, saturation, inundation visible on aerial imagery, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is reed canary grass (*Phalaris arundinacea*), and narrowleaf cattail (*Typha angustifolia*). Soils have a silt loam to gravelly silt loam texture. The hydric soil indicator is a stripped matrix (S6).

Wetland W-2 is a 0.07-acre PEM wetland located perpendicular to the western boundary of the Project Site, near the buildings. This wetland is contained within the Project Site and due to man-made disturbances it appears to be isolated from other wetlands and streams. On aerial imagery, which was potentially taken after a storm event, a dark line of wet soil can be seen following depressions in topography “attempting” to drain the wetland towards the S-1 stream corridor, but unsuccessfully. Had there not been the man-made disturbance, this wetland would likely have drained to this area and been hydrologically connected to S-1. While this feature is potentially non-jurisdictional to the USACE due to the man-made features inhibiting the connection, it is within 4,000 feet of a tributary; therefore, a significant nexus determination by the USACE would be required to determine whether or not this wetland is under USACE jurisdiction. Hydrology originates from the agricultural fields to the north. Indicators of wetland hydrology include surface water, a high water table, saturation, water-stained leaves, oxidized rhizospheres on living roots, geomorphic position, and the FAC-neutral test. The dominant vegetation is narrowleaf cattail and reed canary grass. Soils have a clay loam texture. The hydric soil indicator is a depleted matrix (F3).

Wetland W-3 is a 0.82-acre palustrine unconsolidated bottom (PUB) pond located in the easternmost portion of the Project Site. This pond drains off-site to the north through two parallel culverts and likely continues on as “Minor Tributaries to West of Hudson.” Hydrology originates from Waterbody S-1 and Wetland W-5. Wetland W-3 is therefore likely under USACE jurisdiction. Wetland W-3 is also mapped as a NWI PUBHx feature. Indicators of wetland hydrology include surface water, a high water table, inundation visible on aerial imagery, sparsely vegetated concave surface, saturation visible on aerial imagery, and geomorphic position. The dominant vegetation surrounding the pond is silky dogwood and quaking aspen. Soils were not obtainable from the bottom of the pond due to inundation.

Wetland W-4 is a 0.20-acre PEM wetland located in an overgrown field in the eastern portion of the Project Site. This wetland is contained on the Project Site but appears to have connections to Wetland W-5 via overland flow and/or groundwater. Wetland W-4 is therefore likely under USACE jurisdiction. Hydrology originates from uplands to the south. Indicators of wetland hydrology include surface water, a high water table, saturation, oxidized rhizospheres on living roots, drainage patterns, and the FAC-neutral test. The dominant vegetation is purple loosestrife and narrowleaf cattail. Soils have a silt loam to sandy clay loam texture. The hydric soil indicator is a depleted matrix (F3).

Wetland W-5 is a 1.48-acre PEM (1.45 acres) and palustrine scrub-shrub (PSS; 0.03 acres) wetland that occasionally abuts Waterbody S-1 in the eastern portion of the Project Site. Wetland W-5 also ties to Wetland W-3. Portions of this wetland continue off-site to the east. Wetland W-5 is therefore likely under USACE jurisdiction. Within a portion of this wetland there is a man-made dug ditch that ties to Wetland W-3, however this ditch does not have any flowing water and is full of common reed. Hydrology originates from the surrounding uplands and Waterbody S-1. In the PEM portion of the wetland, indicators of wetland hydrology include surface water, a high water table, saturation, drainage patterns, geomorphic position, and the FAC-neutral test. The dominant vegetation is purple loosestrife and common duckweed (*Lemna minor*). Soils have a silt loam

texture, and the hydric soil indicator is a depleted matrix (F3).In the PSS portion of the wetland, indicators of wetland hydrology include surface water, a high water table, saturation, inundation visible on aerial imagery, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is black willow (*Salix nigra*), silky dogwood, and reed canary grass. Soils have a silty clay loam to rocky silty clay loam texture, and the hydric soil indicator is a loamy gleyed matrix (F2).

Wetland W-6 is a 0.16-acre PEM wetland located in the northernmost corner of the Project Site. This wetland is contained onsite, however, it is in close proximity to Waterbody S-3. Wetland W-6 is therefore likely under USACE jurisdiction. Hydrology originates from the surrounding uplands to the south. Indicators of wetland hydrology include surface water, saturation, water-stained leaves, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is common reed (*Phragmites australis*). Soils have a silty clay loam texture, and the hydric soil indicator is a thick dark surface (A12).

Table 3. Delineated Wetlands within the Project Site

Wetland Field Designation	Cover Type Classification[1] and Acreage				Total Wetland Acreage within Project Site	NWI Cover Type[2]	NYSDEC Wetland ID	NYSDEC Wetland Class[3]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PUB								
W-1	0.34	-	-	-	0.34	R4SBC	-	-	USACE	-	41.668183	-73.977409
W-2	0.07	-	-	-	0.07	-	-	-	USACE[4]	-	41.669323	-73.976921
W-3	-	-	-	0.82	0.82	PUBHx	-	-	USACE	-	41.670418	-73.972534
W-4	0.20	-	-	-	0.20	-	-	-	USACE	-	41.668525	-73.974098
W-5	1.45	0.03	-	-	1.48	-	-	-	USACE	-	41.669435	-73.973646
W-6	0.16	-	-	-	0.16	-	-	-	USACE	-	41.675822	-73.97643
Total Wetland Acreage Delineated:					3.07							

[1]PEM – palustrine emergent; PSS – palustrine scrub-shrub; PFO – palustrine forested; PUB – palustrine unconsolidated bottom
[2]R4SBC – all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater.; PUBHx – palustrine unconsolidated bottom wetland excavated by humans, with at least 25% cover of particles other than stones, and a vegetative cover less than 30%.
[3]The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings (I–IV), with Class I being the highest or best quality wetland and Class IV being the lowest quality.
[4]This wetland may be considered non-jurisdictional due to man-made disturbance, however it is within 4,000 feet of a jurisdictional tributary and would require a significant nexus determination by the USACE to determine the jurisdictional status.

5.3 Delineated Waterbodies

Waterbody S-1 is a perennial waterbody that is approximately 4.5 to 5 feet wide with 4 to 5-foot high banks. It ranges from 12 to 24 inches deep with a cobble, gravel, boulder, and silt/clay streambed. Approximately, 1,617.35 linear feet of this stream flows across the Project Site. This waterbody originates offsite, entering in the southwestern portion of the Project Site and draining to the northeast into Wetland W-3. Water from W-3 exits the northern end of the pond through two parallel culverts where the waterbody continues off-site. Wetland W-5 is adjacent to this waterbody in several areas. Additionally, Waterbody S-2 drains into Waterbody S-1. There is a small concrete dam within S-1, located to the east of the easternmost structure. This dam pooled water above it, however it also allowed water to continue flowing northeast. Waterbody S-1 generally corresponds to a NYSDEC-mapped Class C waterbody: Minor Tributaries to West of Hudson and NWI riverine feature, although the mapping is off slightly to the south. Additionally, the southern end of this mapped stream has been diverted to the north and Wetland W-1 remains where this stream likely used to be. There is an existing crossing of this stream for the access road to the buildings onsite. Waterbody S-1 is likely under USACE jurisdiction, as it drains off-site and likely connects to WOTUS.

Waterbody S-2 is an intermittent waterbody that is approximately 4 feet wide with 2-foot high banks. This waterbody was likely manmade in the recent past as it is not visible on aerial imagery. It ranges from 0 to 6 inches deep with a shale, cobble, gravel, and silt/clay streambed. Approximately 183.11 linear feet of this stream were mapped within the Project Site. This waterbody originates from groundwater behind the barns in the southwestern portion of the Project Site and drains to the southwest where it flows into S-1. No wetlands intersect this waterbody. Waterbody S-2 is likely under USACE jurisdiction, as it drains into S-1 which flows off-site and likely connects to WOTUS.

Waterbody S-3 is a perennial waterbody that is approximately 7 feet wide with 1.5-foot high banks. It ranges from 6 to 24 inches deep with a cobble, gravel, silt/clay, and organic matter streambed. This waterbody originates offsite and enters in the northernmost portion of the Project Site through a culvert. Waterbody S-3 drains to the north into a separate culvert under Mahoney Road through which the waterbody continues off-site. Approximately 144.04 linear feet of this stream were mapped within the Project Site. No wetlands intersect this waterbody, but it lies directly north and adjacent to Wetland W-6. Waterbody S-3 is likely under USACE jurisdiction, as it drains off-site and likely connects to WOTUS.

Representative photographs taken of each delineated wetland community and waterbody within the Project Site are provided in Appendix B. Completed USACE Routine Wetland Determination Forms and TRC Stream Inventory Data Forms are provided in Appendix C.

Table 4. Delineated Waterbodies within the Project Site

Waterbody Field Designation	Flow Regime Classification	Linear Feet within Project Site	NYSDEC Waterbody Name and Regulatory ID Number	NYSDEC Classification[1] and Standard[2]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
S-1	Perennial	1,617.35	Minor Tributaries to West of Hudson (862-392)	Class C	USACE	-	41.668926	-73.974883
S-2	Intermittent	183.11	-	-	USACE	-	41.668811	-73.97751
S-3	Perennial	144.04	-	-	USACE	-	41.67597	-73.976469
Total Waterbody Length Delineated:		1,944.50						

[1]A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Waters with a classification of D are generally suitable for fishing and non-contact recreation.
[2] Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

6.0 CONCLUSIONS

During the wetland and waterbody delineation on April 29 and 30, 2019, TRC delineated six wetlands (comprising 3.07 acres in total) and three waterbodies (comprising 1,944.50 linear feet in total). Four of the six wetlands have PEM cover types, one has a combination of PEM and PSS cover types, and the remaining wetland has a PUB cover type. TRC analysis suggests that five wetlands (W-1, W-3, W-4, W-5, and W-6) within the Project Site are likely under USACE jurisdiction as they are all likely hydrologically connected to WOTUS. While Wetland W-2 is potentially non-jurisdictional due to the man-made disturbance, it is also within 4,000 feet of a USACE jurisdictional tributary and therefore is subject to a significant nexus determination by the USACE which could result in the wetland being under USACE jurisdiction. Therefore, within this report, Wetland W-2 has conservatively been presumed USACE-jurisdictional. There are no buffers or setbacks associated with USACE-regulated wetlands. There are no NYSDEC-mapped wetlands within the Project Site.

Two of the three waterbodies found onsite exhibit perennial flow regimes, while the third waterbody exhibits an intermittent flow regime. All three waterbodies are connected to WOTUS and are likely jurisdictional under the USACE. Only one stream, Waterbody S-1, is mapped as a NYSDEC waterbody. As a Class C waterbody, S-1 is not considered a protected stream by the NYSDEC. This stream corridor is the main feature on the Project Site that most of the other features are associated with. Final determination of the jurisdictional status of the wetlands and waterbodies identified on the Project Site must be made by both the USACE and the NYSDEC upon completion of detailed reviews by those agencies.

7.0 REFERENCES

Bailey, R.G. 1995. Description of the ecoregions of the United States. Miscellaneous Publication No. 1391. Second edition, revised. Washington, DC: USDA Forest Service.

Browne, S. et al. 1995. New York State Freshwater Wetlands Delineation Manual. New York State Department of Environmental Conservation, Division of Fish and Wildlife, Bureau of Habitat, Albany, NY.

Bryce, S.A., Griffith, G.E., Omernik, J.M., Edinger, G., Indick, S., Vargas, O., and Carlson, D. 2010. Ecoregions of New York (color poster with map descriptive text, summary tables, and photographs): Reston, Virginia, U.S. geological Survey, map scale 1:1,250,000.

Cowardin, L.M., et al. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C. 131 pp.

Definition of Waters of the United States 33 CFR Part 328 (1986).

Dickinson, N.R. 1983. A division of southern and western New York State into ecological zones. Unpubl. Report for NYSDEC, Wildlife Resources Center, Delmar, NY.

Edinger, G.J., et al. 2014. Ecological Communities of New York State, Second Edition. New York Heritage Program, NYS Department of Environmental Conservation, Albany, NY, 160 pp.

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

Federal Geographic Data Committee. 2013. The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Update of Wetland Ratings. http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html (Accessed May 2019).

McNab, W. et al. January 2007. Description of “Ecological Subregions: Sections of the Conterminous United States.” First Approximation. USDA Forest Service.

Munsell Color. 2015. Munsell Soil Color Book. X-Rite Corporation, Grand Rapids, MI.

National Weather Service Corporate Image Web Team. (2005, October 24). Albany, NY. https://w2.weather.gov/climate/index.php?wfo=aly. Accessed May 2019.

National Wetlands Inventory Wetlands, Electronic Vector Quad Maps of New York, United States Geological Survey.

New York State Department of Environmental Conservation (NYSDEC) Hydrography Network and Water bodies, NYS Hydrologic Units.

NYSDEC website, (http://www.dec.state.ny.us/).

NYSDEC (n.d.a). Landsman Kill Hudson River (0202000801). http://www.dec.ny.gov/lands/48373.html. Accessed May 2019.

NYSDEC (n.d.a). Lower Hudson Watershed. Available at: https://www.dec.ny.gov/lands/48367.html. Accessed May 2019.

New York State Department of Transportation. 2013. Geotechnical Design Manual. Office of Technical Services, Geotechnical Engineering Bureau.

National Oceanic and Atmospheric Administration (NOAA). 2017. Anthony Arguez, Imke Durre, Scott Applequist, Mike Squires, Russell Vose, Xungang Yin, and Rocky Bilotta (2010). NOAA's U.S. Climate Normals (1981-2010). NOAA National Centers for Environmental Information. DOI:10.7289/V5PN93JP [January 2017].

Seaber, Paul R.; Kapinos, F. Paul; Knapp, George L. "*Hydrologic Unit Maps, U.S. Geological Survey Water-Supply Paper 2294*" (PDF). United States Geological Survey. Retrieved May 2019.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed May 2019.

Thien, S.J. 1979. A flow diagram for teaching texture by feel analysis. Journal of Agronomic Education. 8:54-55.

United States Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, MS, 162 pp.

U.S. Climate Data. 2019. Poughkeepsie, New York. Available at: https://www.usclimatedata.com/climate/poughkeepsie/new-york/united-states/usny1174. Accessed May 2019.

USDA NRCS. 2006. Land Resources Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. USDA Handbook 296.

USDA NRCS. 2009. New York Rapid Watershed Profile: Hudson-Wappinger Watershed. Syracuse State Office. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ny/technical/dma/rwa/?cid=stelprdb1246971. Accessed May 2019.

USDA NRCS. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

United States Department of the Interior, Geological Survey (USGS). National Hydrography Dataset. https://nhd.usgs.gov/ Modified 2018.

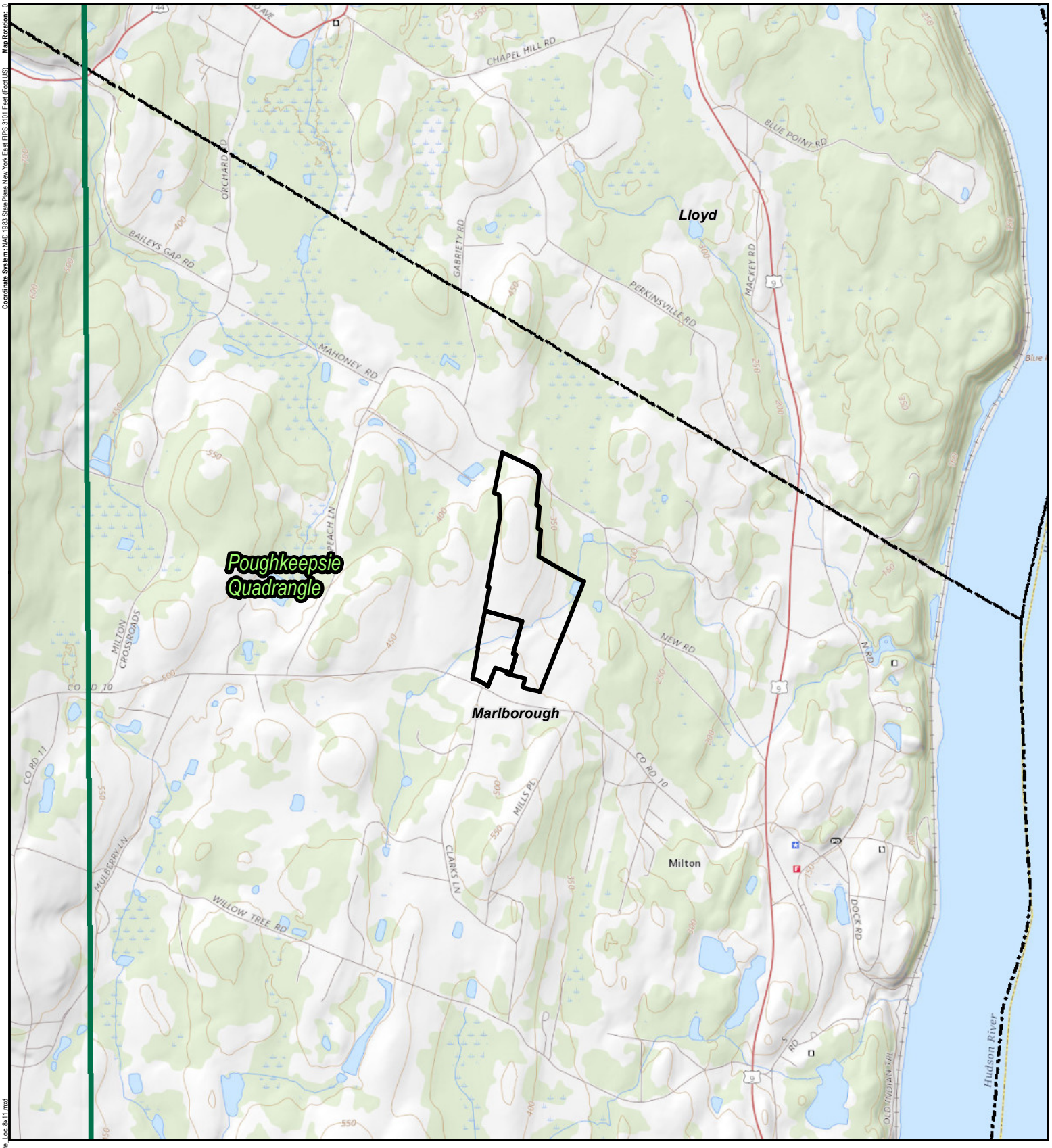
USGS. 2016. Poughkeepsie Quadrangle, New York – Ulster County. 7.5 Minute Series (Topographic).

USGS. 2014. Hydrologic Unit Maps. Available at: http://water.usgs.gov/GIS/huc.html Accessed May 2019.

USGS and USDA NRCS. 2013. Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD) (4 ed.): U.S. Geological Survey Techniques and Methods 11–A3, 63 p. http://pubs.usgs.gov/tm/tm11a3/. Accessed May 2019.

Will, G.B. et al. 1982. The ecological zones of New York. Unpubl. report for NYSDEC, Albany, New York.

APPENDIX A
Figures



LEGEND

- PROJECT BOUNDARY
- USGS 24K QUAD BOUNDARY
- TOWN BOUNDARY

1:24,000
1 " = 2,000 '

1. BASEMAP IMAGERY FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

0 1,000 2,000 Feet

PROJECT:
CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS		
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

FIGURE 1

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

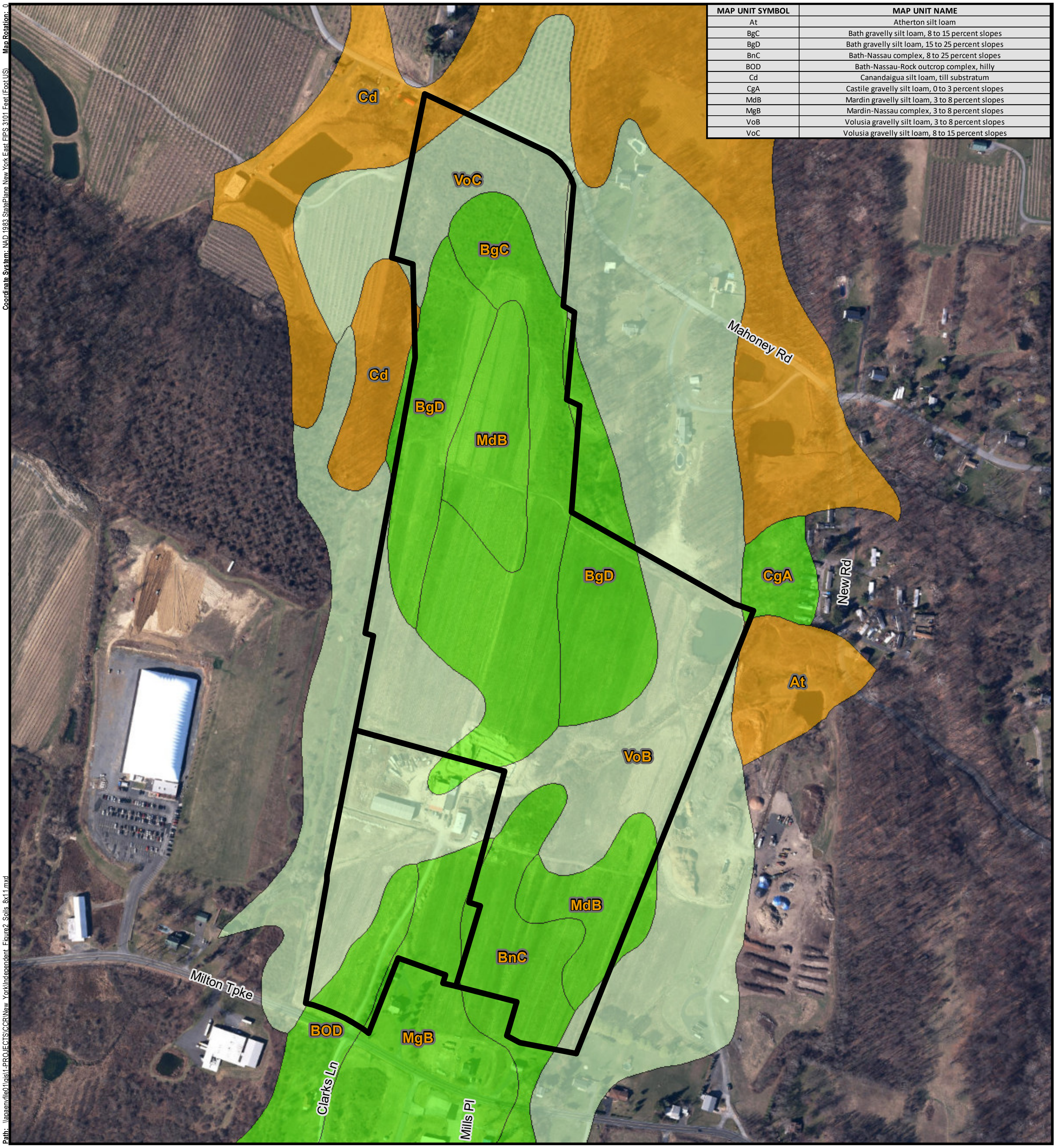
Path: \\agcenv-file01\gis\1-PROJECTS\CCR\New_York\Independent_Fig1_Site_Loc_8x11.mxd
Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Ficot US) Map Rotation: 0

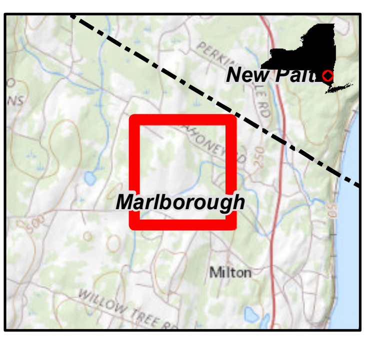
Map Rotation: 0

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Foot US)

Path: \\apaenvfile01\gis1\-PROJECTS\CCR\New York\Independent_Figure2_Soils_8x11.mxd

MAP UNIT SYMBOL	MAP UNIT NAME
At	Atherton silt loam
BgC	Bath gravelly silt loam, 8 to 15 percent slopes
BgD	Bath gravelly silt loam, 15 to 25 percent slopes
BnC	Bath-Nassau complex, 8 to 25 percent slopes
BOD	Bath-Nassau-Rock outcrop complex, hilly
Cd	Canandaigua silt loam, till substratum
CgA	Castile gravelly silt loam, 0 to 3 percent slopes
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes
MgB	Mardin-Nassau complex, 3 to 8 percent slopes
VoB	Volusia gravelly silt loam, 3 to 8 percent slopes
VoC	Volusia gravelly silt loam, 8 to 15 percent slopes





LEGEND

- HYDRIC RATING (100%)
- HYDRIC RATING (66 TO 90%)
- HYDRIC RATING (33 TO 65%)
- HYDRIC RATING (1 TO 32%)
- HYDRIC RATING (0%)
- NOT RATED OR NOT AVAILABLE
- SITE LOCATION

N

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.

2. SOILS DATA ACQUIRED FROM THE NATURAL RESOURCES CONSERVATION SERVICE, USING THE UNITED STATES DEPARTMENT OF AGRICULTURE WEB SOIL SURVEY.

1:6,000

1 " = 500 '

0 250 500 Feet

PROJECT:

CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:

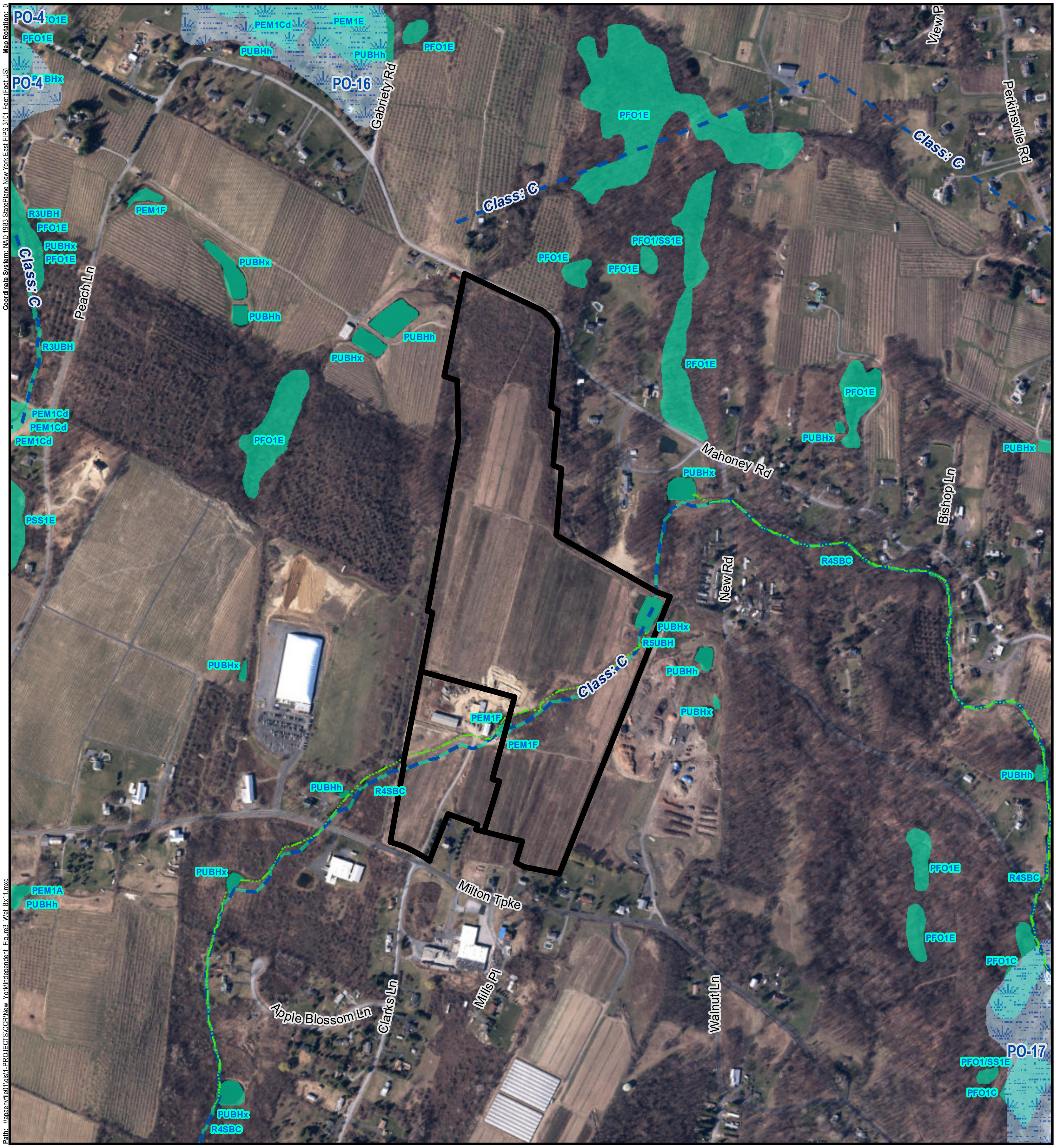
SOILS MAP

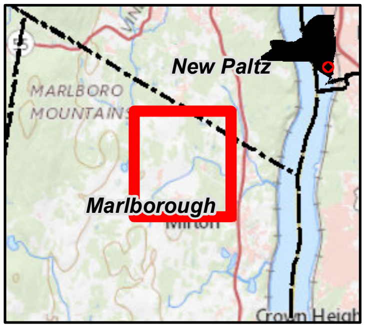
DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS	FIGURE 2	
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Foot US) Map Rotation: 0





LEGEND

- WATERBODIES (NHD)
- WATERBODIES (NYSDEC)
- WETLANDS (NYSDEC)
- WETLANDS (NWI)
- 100 YEAR FLOODPLAIN (FEMA)
- SITE LOCATION

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.

2. DATA ACQUIRED FROM THE NYSDEC, NWI, FEMA, AND NYGIS.

N

1 " = 800 '

0 400 800 Feet

PROJECT:

CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:

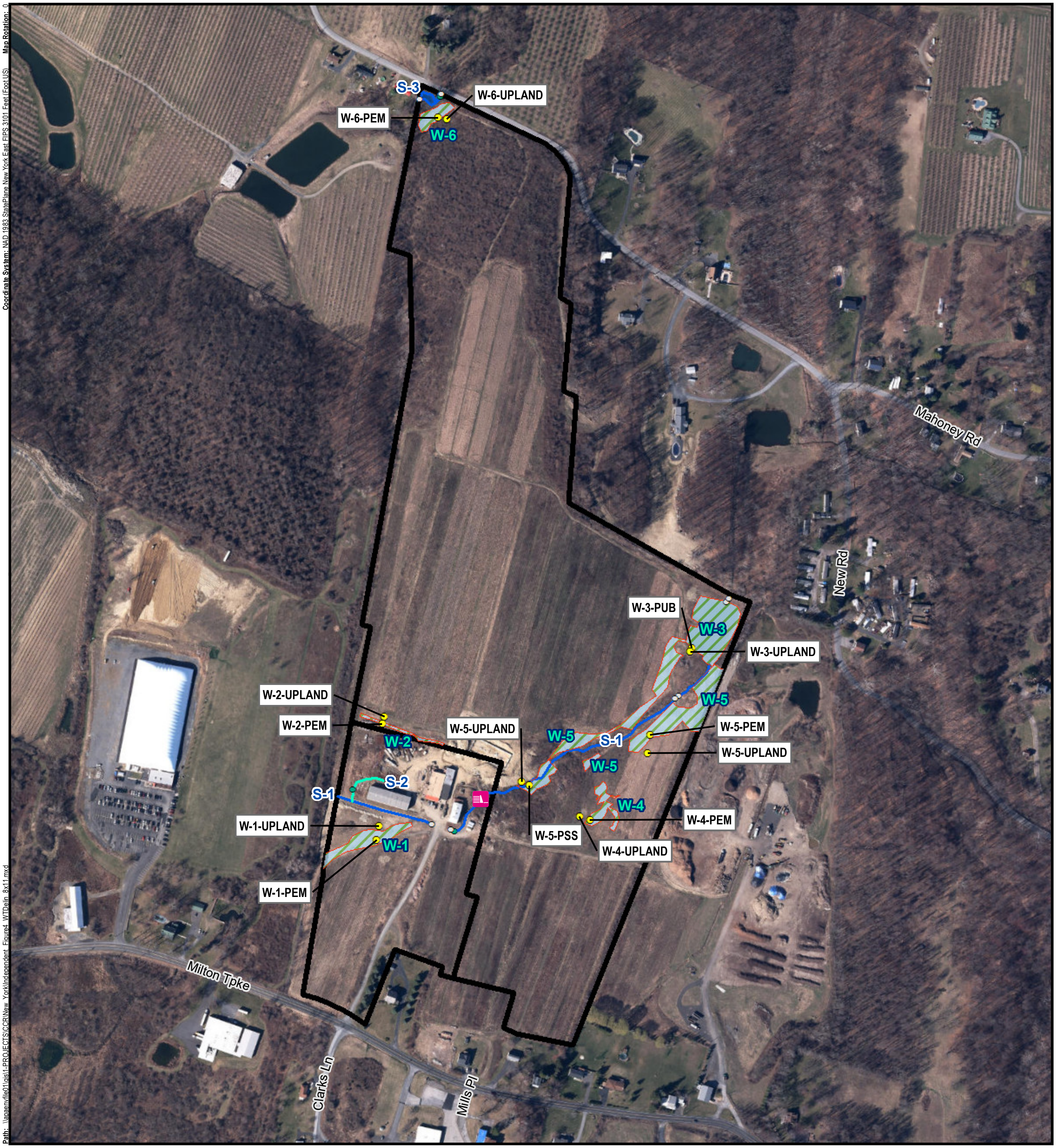
FEDERAL & STATE WATER RESOURCES

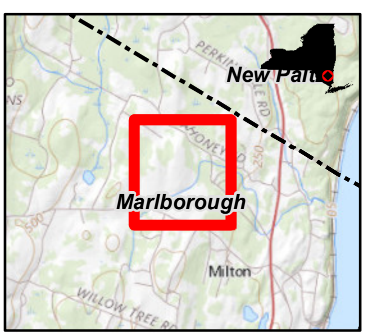
DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS	FIGURE 3	
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

Map Rotation: 0
Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Foot US)





LEGEND

- CULVERT LOCATIONS
- DATA POINT
- STREAM PLOTS
- DAM LOCATION
- TRC DELINEATED STREAM - INTERMITTENT - USACE JURISDICTIONAL
- TRC DELINEATED STREAM - PERENNIAL - USACE JURISDICTIONAL
- TRC DELINEATED WETLAND BOUNDARY
- TRC DELINEATED WETLANDS - USACE JURISDICTIONAL
- TRC DELINEATED SURFACE WATER
- SITE LOCATION

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.
2. RESOURCE DELINEATION COMPLETED IN THE FIELD BY TRC ON 4/29/2019 & 4/30/2019.

N

0 250 500 Feet
1 " = 500 '

PROJECT:
CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

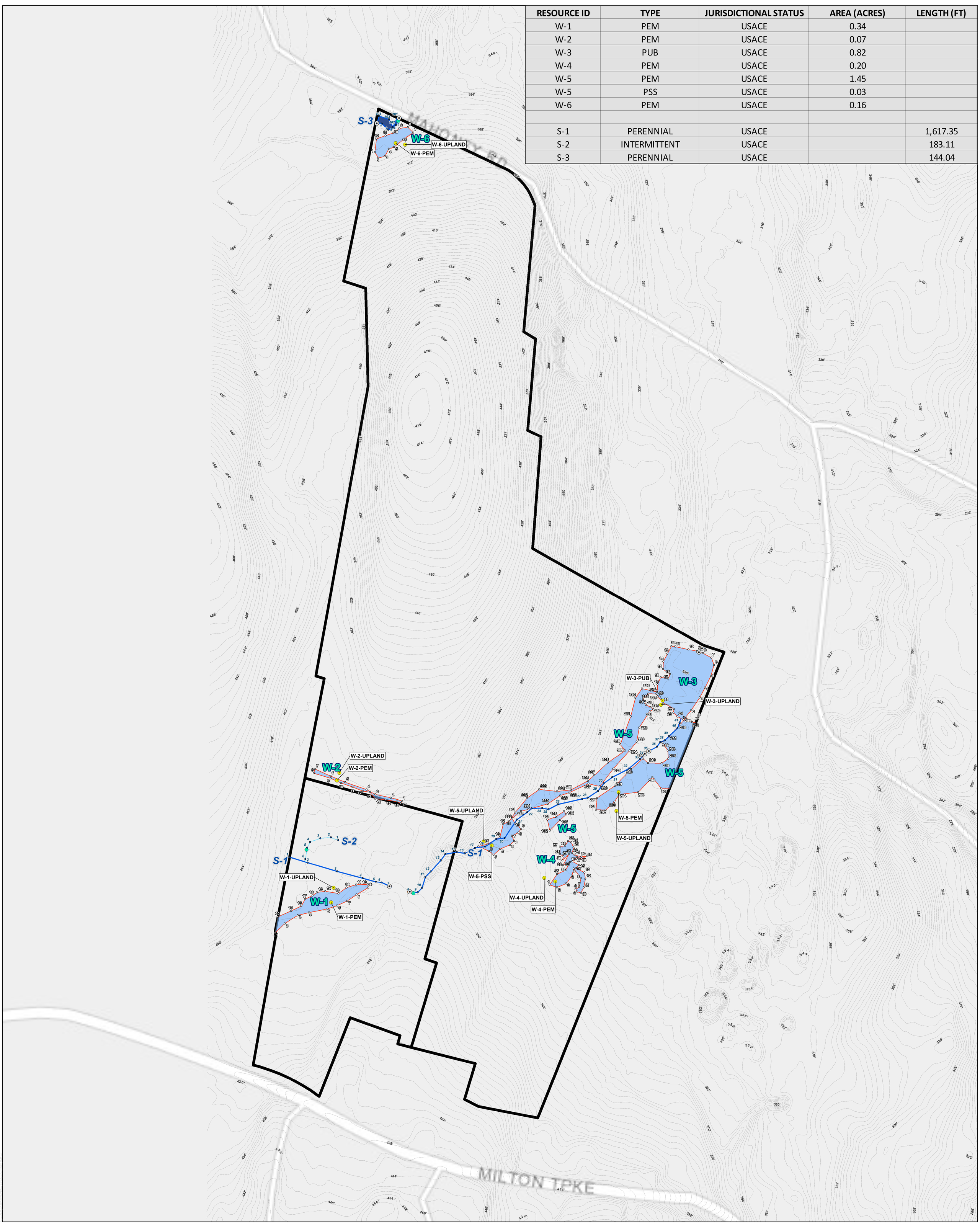
TITLE:
DELINEATED WETLANDS AND STREAMS

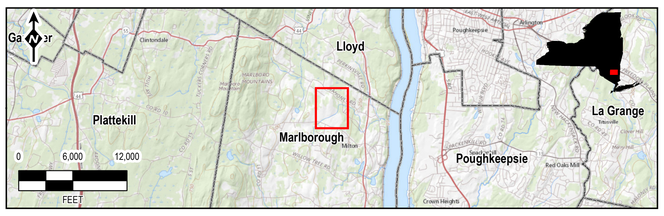
DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS	FIGURE 4	
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

RESOURCE ID	TYPE	JURISDICTIONAL STATUS	AREA (ACRES)	LENGTH (FT)
W-1	PEM	USACE	0.34	
W-2	PEM	USACE	0.07	
W-3	PUB	USACE	0.82	
W-4	PEM	USACE	0.20	
W-5	PEM	USACE	1.45	
W-5	PSS	USACE	0.03	
W-6	PEM	USACE	0.16	
S-1	PERENNIAL	USACE		1,617.35
S-2	INTERMITTENT	USACE		183.11
S-3	PERENNIAL	USACE		144.04





LEGEND

- STREAM FLAG
- WETLAND FLAG
- CULVERT LOCATIONS
- TRC DELINEATED INTERMITTENT SREAM - USACE JURISDICTIONAL
- TRC DELINEATED PERENNIAL SREAM - USACE JURISDICTIONAL
- 2-FOOT CONTOURS
- USACE PLOTS
- STREAM PLOTS
- TRC DELINEATED WETLAND BOUNDARY
- TRC DELINEATED WETLANDS - USACE JURISDICTIONAL
- TRC DELINEATED SURFACE WATER
- PROJECT BOUNDARY - 75.80 ACRES

0 100 200
Feet
1 " = 100 '

N

CYPRESS CREEK RENEWABLES

INDEPENDENT SOLAR, LLC

TOWN OF MARLBOROUGH
ULSTER COUNTY, NY

DELINEATION FLAGGING MAP

CREATED: 5/14/2019

TRC

10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

SOURCES: ESRI, NYGIS, TRC, CCR

APPENDIX B
Photograph Log

Photograph 1. Overview of western agricultural fields at the Project Site, facing north. Photo taken on 4/29/19.

Photograph 2. Southeastern agricultural field, facing northeast. Photo taken on 4/29/19.

Photograph 3. Buildings at the Project Site, facing south. Photo taken on 4/29/19.

Photograph 4. Buildings at the Project Site, facing east. Photo taken on 4/29/19.

Photograph 5. Foundation frost walls at the Project Site, facing east. Photo taken on 4/29/19.

Photograph 6. Shrub area in the northern portion of the Project Site, facing north-northeast. Photo taken on 4/30/19.

Photograph 7. Access road to the Project Site, facing southwest. Photo taken on 4/29/19.

Photograph 8. Waterbody S-1, facing west northwest (upstream). Photo taken on 4/29/19.

Photograph 9. Dam in Waterbody S-1, facing north (downstream). Photo taken on 4/29/19.

Photograph 10. Waterbody S-2, facing northeast (upstream). Photo taken on 4/29/19.

Photograph 11. Waterbody S-3, facing southwest (upstream). Photo taken on 4/30/19.

Photograph 12. Palustrine emergent (PEM) Wetland W-1, facing west. Photo taken on 4/29/19.

Photograph 13. PEM Wetland W-2, facing south. Photo taken on 4/29/19.

Photograph 14. Palustrine unconsolidated bottom (PUB) Wetland W-3, facing north. Photo taken on 4/29/19.

Photograph 15. PEM Wetland W-4, facing east. Photo taken on 4/30/19.

Photograph 16. PEM portion of Wetland W-5, facing west. Photo taken on 4/30/19.

Photograph 17. Palustrine scrub-shrub (PSS) portion of Wetland W-5, facing southeast. Photo taken on 4/30/19.

Photograph 18. PEM Wetland W-6, facing northeast. Photo taken on 4/30/19.

APPENDIX C
USACE Routine Wetland Determination Forms
&
TRC's Stream Inventory Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-1_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668267 **Long:** -73.9772005 **Datum:** WGS84
Soil Map Unit Name: Volusia gravellysilt loam, 3 to 8 percent slopes (VoB) **NWI classification:** R4SB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-1

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	14

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met. Seems to be a historically filled stream.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-1_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phalaris arundinacea*	80	Yes	FACW
2. *Typha angustifolia*	50	Yes	OBL
3. *Phragmites australis*	20	No	FACW
4. *Lythrum salicaria*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	155	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	55	x 1 =	55
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	155	(A)	255 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-1_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	2.5Y 4/1	100			D		Silt Loam	
16 - 18	2.5Y 5/2	95	7.5YR 5/8	5	C	M	Gravelly Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
_✓_ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-1_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): slight slope **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668372 **Long:** -73.9772706 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-1_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	80	Yes	FACU
2. *Solidago sp.*	40	Yes	NI
3. *Rosa multiflora*	15	No	FACU
4. *Fragaria virginiana*	5	No	FACU
5. *Equisetum arvense*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	145	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	105	(A)	415 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-1_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 4/2	100					Silt Loam	
10 - 18	2.5Y 5/2	80	7.5YR 5/8	20	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-2_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6694166 **Long:** -73.9772521 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-2

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-2_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Typha angustifolia*	80	Yes	OBL
2. *Phalaris arundinacea*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	130 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-2_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	2.5Y 5/2	75	10YR 5/6	25	RM	M	Clay Loam	Soil seems historically mixed

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-2_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6695036 **Long:** -73.9772048 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-2_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	40	Yes	FACU
2. *Ambrosia psilostachya*	40	Yes	FAC
3. *Taraxacum officinale*	5	No	FACU
4. *Fragaria virginiana*	5	No	FACU
5. *Plantago lanceolata*	5	No	FACU
6. *Trifolium repens*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	100	(A)	360 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-2_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 3/2	100					Silt Loam	
12 - 18	10YR 4/2	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

The criterion for hydric soil is not met.

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-3_PUB-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.670177 **Long:** -73.972847 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** PUB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-3

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB. Pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	36
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-3_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Cornus amomum*	5	Yes	FACW
2. *Populus tremuloides*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	10	(A)	30 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

Soils were not able to be observed due to inundation from pond water.

Vegetation Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Marlboro, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-3_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6701732 **Long:** -73.9728567 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-3_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	65	Yes	FACU
2. *Equisetum arvense*	30	Yes	FAC
3. *Fragaria virginiana*	10	No	FACU
4. *Trifolium repens*	10	No	FACU
5. *Phalaris arundinacea*	3	No	FACW
6. *Daucus carota*	3	No	UPL
7. *Plantago lanceolata*	3	No	FACU
8.			
9.			
10.			
11.			
12.			
	124	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	30	x 3 =	90
FACU species	88	x 4 =	352
UPL species	3	x 5 =	15
Column Totals	124	(A)	463 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/2	100					Silty Clay Loam	
4 - 7	2.5Y 4/2	100					Rocky Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-4_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6682962 **Long:** -73.9743566 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-4

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met. stormwater drainage from above slope ag field contributing to hydrology.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-4_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Lythrum salicaria*	65	Yes	OBL
2. *Typha angustifolia*	50	Yes	OBL
3. *Juncus effusus*	10	No	OBL
4. *Carex sp.*	5	No	NI
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	125	x 1 =	125
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125	(A)	125 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Historic agriculture field that is no longer maintained.

SOIL

Sampling Point: W-4_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	2.5Y 4/1	100					Silt Loam	
6 - 12	2.5Y 5/2	75	7.5YR 5/6	25	RM	M/PL	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulders and gravels
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot
East

Photo of Sample Plot
South

Photo of Sample Plot
West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-4_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668389 **Long:** -73.974471 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-4_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	80	Yes	FAC
2. *Solidago sp.*	25	Yes	NI
3. *Cirsium vulgare*	5	No	FACU
4. *Taraxacum officinale*	5	No	FACU
5. *Arctium minus*	5	No	FACU
6. *Allium schoenoprasum*	4	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	124	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	19	x 4 =	76
UPL species	0	x 5 =	0
Column Totals	99	(A)	316 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-4_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/2	100					Gravelly Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.669223 **Long:** -73.973509 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-5

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1	
Water Table Present?	Yes ✓ No ____	Depth (inches):	9	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Lythrum salicaria*	70	Yes	OBL
2. *Lemna minor*	55	Yes	OBL
3. *Solidago sp.*	20	No	NI
4. *Poa pratensis*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	147	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	125	x 1 =	125
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals	127	(A)	133 (B)

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	2.5Y 4/2	100			D		Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Cobbles and gravels
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot
West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6691273 **Long:** -73.9734994 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **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? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	80	Yes	FAC
2. *Solidago sp.*	25	Yes	NI
3. *Poa pratensis*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	300 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 4/2	100					Rocky Silt Loam	
10 - 14	10YR 4/3	100					Rocky Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_PSS-2
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Concave **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668679 **Long:** -73.975124 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **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? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-5

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Salix nigra*	45	Yes	OBL
2. *Cornus amomum*	25	Yes	FACW
3. *Populus tremuloides*	5	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Impatiens capensis*	15	No	FACW
3. *Lythrum salicaria*	15	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	60	x 1 =	60
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	165	(A)	280 (B)
Prevalence Index = B/A =	1.7		

Hydrophytic Vegetation Indicators:

- ✓ 1- Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_PSS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	5GY 5/1	100					Silty Clay Loam	
5 - 18	10YR 4/2	100					Rocky Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
_✓_ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_UPL-2
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 25 to 30
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6687405 **Long:** -73.9751718 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **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? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	65	Yes	FAC
2. *Solidago sp.*	20	No	NI
3. *Potentilla argentea*	10	No	FACU
4. *Trifolium repens*	5	No	FACU
5. *Taraxacum officinale*	5	No	FACU
6. *Toxicodendron radicans*	2	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	107	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	67	x 3 =	201
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	87	(A)	281 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 5/6	100					Gravelly Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

The criterion for hydric soil is not met.

Vegetation Photos

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot
East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-6_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6758 **Long:** -73.976516 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 8 to 15 percent slope (VoC) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-6

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	4

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-6_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phragmites australis*	100	Yes	FACW
2. *Onoclea sensibilis*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	105	x 2 =	210
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	210 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-6_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 3/1	95	10YR 4/2	5	RM	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
✓ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-6_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6757333 **Long:** -73.9764047 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 8 to 15 percent slope (VoC) **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? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	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 procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-6_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Malus sp.*	5	Yes	NI
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	20	Yes	FAC
2. *Rubus allegheniensis*	15	Yes	FACU
3. *Allium schoenoprasum*	15	Yes	FACU
4. *Lonicera morrowii*	15	Yes	FACU
5. *Solidago sp.*	10	No	NI
6. *Toxicodendron radicans*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	25	x 3 =	75
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	85	(A)	285 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 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 vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-6_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/3	100					Silty Clay Loam	
4 - 12	10YR 4/2	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks, boulders
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Stream Inventory Data Form

Project Name: CCR - Independent
Date: 4/29/19
Project Number: 319480
Evaluated By: Weston Hillegas
Address: 200 Milton Turnpike Milton, NY
USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-1
Stream Name: Minor tribs to west of Hudson
Stream Location: Agriculture Land
(e.g. nearest road, structure): Warehouse/farm structures

Stream Classification
- X Perennial
- Intermittent
- Ephemeral

Flow
- Direction: NE
- Dry / Low / X Moderate
- High / Flooding

Presumed Regulatory Authority
- X U.S. Army Corps
- State

Streambed Substrate
- Shale / Sand
- Bedrock / X Silt/Clay
- X Boulders / Organic
- X Cobble/Gravel
- Other

Channel Gradient
- <2% (<1°) Gentle
- 2 - 4% (1 - 2°) Moderate
- X 4 - 10% (2 - 6°) Steep
- >10% (>6°) Very Steep

Width Measurements (feet)
- Ordinary High Water Mark: 4.5
- Across Existing Water: 4
- *Flood Plain Present?*
- Yes, Measure Bankfull Width
- No, Measure Top of Bank Width: 10

Probed Stream Depth
- 0 - 6 in.
- 6 - 12 in.
- X 12 - 24 in.
- 24 - 36 in.
- >36 in.

Observed Use
- Boating / Shellfishing
- Swimming / X Irrigation
- Fishing / X Drainage
- Drinking / Aquaculture
- Other

Water Quality
- Clear
- X Slightly Turbid
- Turbid
- Very Turbid

Bank Height (feet)
- Left*: 4
- Right*: 5

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping		
25 - 35% (14 - 20°)	Steep		
>35% (>20°)	Very Steep	X	X

Bank Erosion Potential

	Left*	Right*
Low		
Moderate	X	X
High		

Bank Substrate
- Shale / X Gravel
- X Bedrock / Sand
- X Cobble / Organic
- X Silt/Clay / Riprap
- Other

Aquatic Habitat
- Aquatic Vegetation / Mud Bar
- Overhanging Vegetation / Sand Bar
- X Undercut Banks / X Riffle - Pool
- Gravel Bar / X Plunge Pools
- Other

Estimated Canopy Closure
- 0 - 10% / 50 - 60%
- X 10 - 20% / 60 - 70%
- 20 - 30% / 70 - 80%
- 30 - 40% / 80 - 90%
- 40 - 50% / 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-1

Adjacent Community Type Upland

	Percent Cover	Dominant Species
Trees	5%	willow
Shrubs		
Herbaceous	80%	Poa Pratensis, Mint, Solidago sp. dandelion, ragweed
Woody Vines		
Bare Soil/Rock		*Type*
Impervious		*Type*

Observed Fauna

___ Waterfowl	___ Fish	___ Salamanders	___ Mink	___ Other
___ Snakes	X Frogs	___ Beaver	___ Otter	
___ Turtles	___ Toads	___ Muskrat	___ Invertebrates	

Presence of Rare, Threatened, or Endangered Species

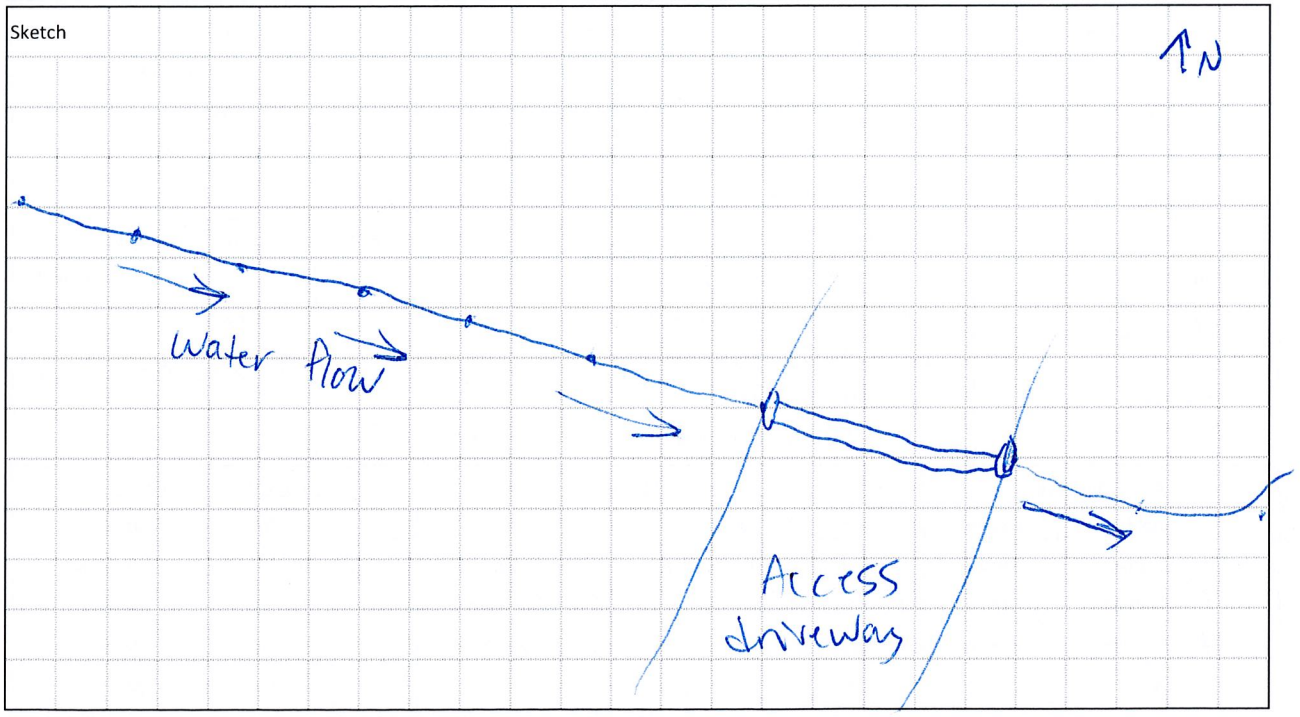
X No ___ Yes *Species & Evidence*

___ Undetermined

Notes (include weather, site access issues, culverts, etc.)

48" HDPE Culvert under the access road to barn/buildings.

Sketch



Stream Inventory Data Form

Project Name: CCR Independent — Date: 4/29/19

Project Number: 319480 — Evaluated By: Weston Hillegas

Address: 206 Milton Turnpike Milton, NY

USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-2 — Stream Name: Unknown

Stream Location: Western side of warehouse

(e.g. nearest road, structure): Warehouse/barn

Stream Classification
- ___ Perennial
- X Intermittent
- ___ Ephemeral

Flow

Direction: SW

___ Dry ___ Low X Moderate ___ High ___ Flooding

Presumed Regulatory Authority
- X U.S. Army Corps
- ___ State

Streambed Substrate

X Shale	___ Sand
___ Bedrock	X Silt/Clay
X Boulders	___ Organic
X Cobble/Gravel	
___ Other	

Channel Gradient

___ <2% (<1°)	Gentle
X 2 - 4% (1 - 2°)	Moderate
___ 4 - 10% (2 - 6°)	Steep
___ >10% (>6°)	Very Steep

Width Measurements (feet)
- Ordinary High Water Mark: 4
- Across Existing Water: 3.5
- *Flood Plain Present?*
- Yes, Measure Bankfull Width: ___
- No, Measure Top of Bank Width: 7

Probed Stream Depth
- X 0 - 6 in.
- ___ 6 - 12 in.
- ___ 12 - 24 in.
- ___ 24 - 36 in.
- ___ >36 in.

Observed Use

___ Boating	___ Shellfishing
___ Swimming	___ Irrigation
___ Fishing	X Drainage
___ Drinking	___ Aquaculture
___ Other	

Water Quality
- ___ Clear
- X Slightly Turbid
- ___ Turbid
- ___ Very Turbid

Bank Height (feet)
- Left*: 2
- Right*: 2

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping		
25 - 35% (14 - 20°)	Steep	X	X
>35% (>20°)	Very Steep		

Bank Erosion Potential

	Left*	Right*
Low		
Moderate		
High	X	X

Bank Substrate

X Shale	X Gravel
___ Bedrock	___ Sand
X Cobble	___ Organic
X Silt/Clay	___ Riprap
___ Other	

Aquatic Habitat

___ Aquatic Vegetation	___ Mud Bar
___ Overhanging Vegetation	___ Sand Bar
___ Undercut Banks	___ Riffle - Pool
___ Gravel Bar	___ Plunge Pools
___ Other	recently excavated fed by GW in sides of banks.

Estimated Canopy Closure

X 0 - 10%	___ 50 - 60%
___ 10 - 20%	___ 60 - 70%
___ 20 - 30%	___ 70 - 80%
___ 30 - 40%	___ 80 - 90%
___ 40 - 50%	___ 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-2

Adjacent Community Type: Small wetland fringe @ intersection of S-1 + S-2 (NE corner)

Percent Cover		Dominant Species
Trees		
Shrubs		
Herbaceous	10	Kentucky blue grass, horsetail, Phragmites
Woody Vines		
Bare Soil/Rock		*Type*
Impervious		*Type*

Observed Fauna

	Waterfowl		Fish		Salamanders		Mink		Other
	Snakes	X	Frogs		Beaver		Otter		
	Turtles		Toads		Muskrat		Invertebrates		

Presence of Rare, Threatened, or Endangered Species

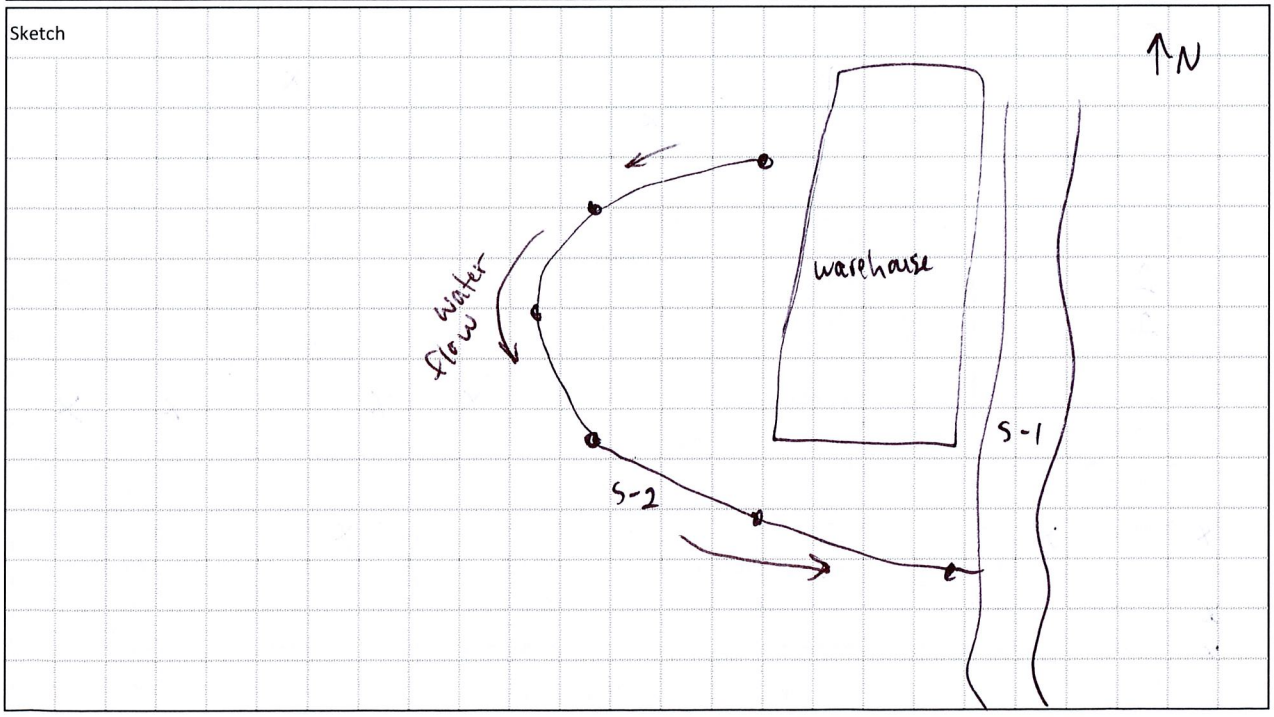
X No ___ Yes *Species & Evidence*

___ Undetermined

Notes (include weather, site access issues, culverts, etc.)

manmade ditch dug to drain GW.

Sketch



Stream Inventory Data Form

Project Name: CCR Independent | Date: 4/30/19

Project Number: 319480 | Evaluated By: Weston Hillegas

Address: 206 Milton Turnpike Milton, NY

USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-3 | Stream Name: N/A

Stream Location: Northern corner of Parcel

(e.g. nearest road, structure): Mahoney Road

Stream Classification

- X Perennial
- Intermittent
- Ephemeral

Flow

Direction: North

- Dry
- Low
- Moderate
- X High
- Flooding

Presumed Regulatory Authority

- X U.S. Army Corps
- State

Streambed Substrate

- Shale
- Bedrock
- Boulders
- X Cobble/Gravel
- Other
- Sand
- X Silt/Clay
- X Organic

Channel Gradient

- X <2% (<1°) Gentle
- 2 - 4% (1 - 2°) Moderate
- 4 - 10% (2 - 6°) Steep
- >10% (>6°) Very Steep

Width Measurements (feet)

Ordinary High Water Mark: 7

Across Existing Water: 6

Flood Plain Present?

Yes, Measure Bankfull Width:

No, Measure Top of Bank Width: 9

Probed Stream Depth

- 0 - 6 in.
- X 6 - 12 in.
- X 12 - 24 in.
- 24 - 36 in.
- >36 in.

Observed Use

- Boating
- Swimming
- Fishing
- Drinking
- Other
- Shellfishing
- Irrigation
- Drainage
- Aquaculture

Water Quality

- Clear
- Slightly Turbid
- X Turbid
- Very Turbid

Bank Height (feet)

Left*: 1.5

Right*: 1.5

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping	X	X
25 - 35% (14 - 20°)	Steep		
>35% (>20°)	Very Steep		

Bank Erosion Potential

	Left*	Right*
Low		
Moderate	X	X
High		

Bank Substrate

- Shale
- Bedrock
- X Cobble
- X Silt/Clay
- Other
- Gravel
- Sand
- X Organic
- Riprap

Aquatic Habitat

- Aquatic Vegetation
- X Overhanging Vegetation
- X Undercut Banks
- Gravel Bar
- X Other down tree
- Mud Bar
- Sand Bar
- Riffle - Pool
- Plunge Pools

Estimated Canopy Closure

- 0 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- X 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-3

Adjacent Community Type W-6 + forest

	Percent Cover	Dominant Species
Trees	80	trempling aspen, malus sp. Weeping willow.
Shrubs		
Herbaceous	20	Phragmites Australis
Woody Vines		
Bare Soil/Rock		Type
Impervious	X	Type Road/culvert

Observed Fauna

Waterfowl	Fish	Salamanders	Mink	Other
Snakes	X Frogs	Beaver	Otter	
Turtles	Toads	Muskrat	Invertebrates	

Presence of Rare, Threatened, or Endangered Species

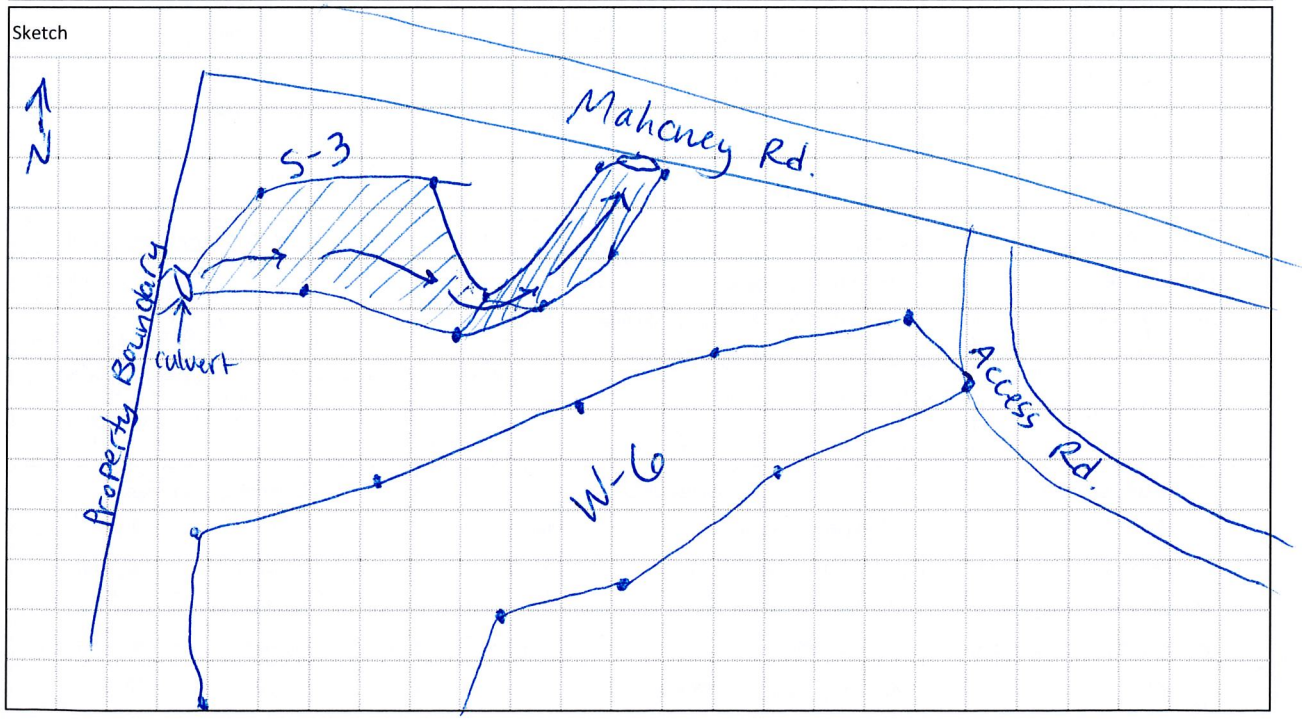
X No Yes *Species & Evidence*

Undetermined

Notes (include weather, site access issues, culverts, etc.)

S-3 enters into an HDPE culvert under Mahoney Rd.

Sketch



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch 2 April 2020

SUBJECT: Permit Application Number NAN-2020-00286-WOR
by Cypress Creek Renewables LLC

Valerie Mitchell
TRC
10 Maxwell Drive, Suite 200
Clifton Park, New York 12065

Dear Ms. Mitchell:

On March 26, 2020, the New York District, U.S. Army Corps of Engineers (Corps), received a request for Department of the Army authorization for the construction of a solar power generation facility to be known as Independent Solar. The project site is in the Hudson River watershed, located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York.

The proposed work is shown on the drawing entitled “Independent Solar, LLC 206 Milton Turnpike, Marlborough, NY 12547 Zoning – Site Plan”, prepared by Cypress Creek Renewables, dated February 11, 2020.

Our review indicates that since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material.

Care should be taken so that any fill or construction materials, including debris, do not enter the waterway to become a drift or pollution hazard. A No Permit Required (NPR) determination by the Corps:

- Does not obviate the requirement to obtain any other Federal, State, or local permits which may be necessary for your project;

- Does not constitute a federal evaluation of possible impacts to species protected under the Endangered Species Act. Projects that have the potential to impact federally listed species should contact the U.S. Fish and Wildlife Service; and,

- Does not constitute a federal evaluation of possible impacts to historic resources protected under Section 106 of the Natural Historic Preservation Act. Projects that have the potential to impact historic sites should contact the State Historic Preservation Officer in New York.

This NPR determination neither addresses nor includes any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Rosita Miranda **2 APR 2020**
Chief, Western Section

United States Department of Agriculture

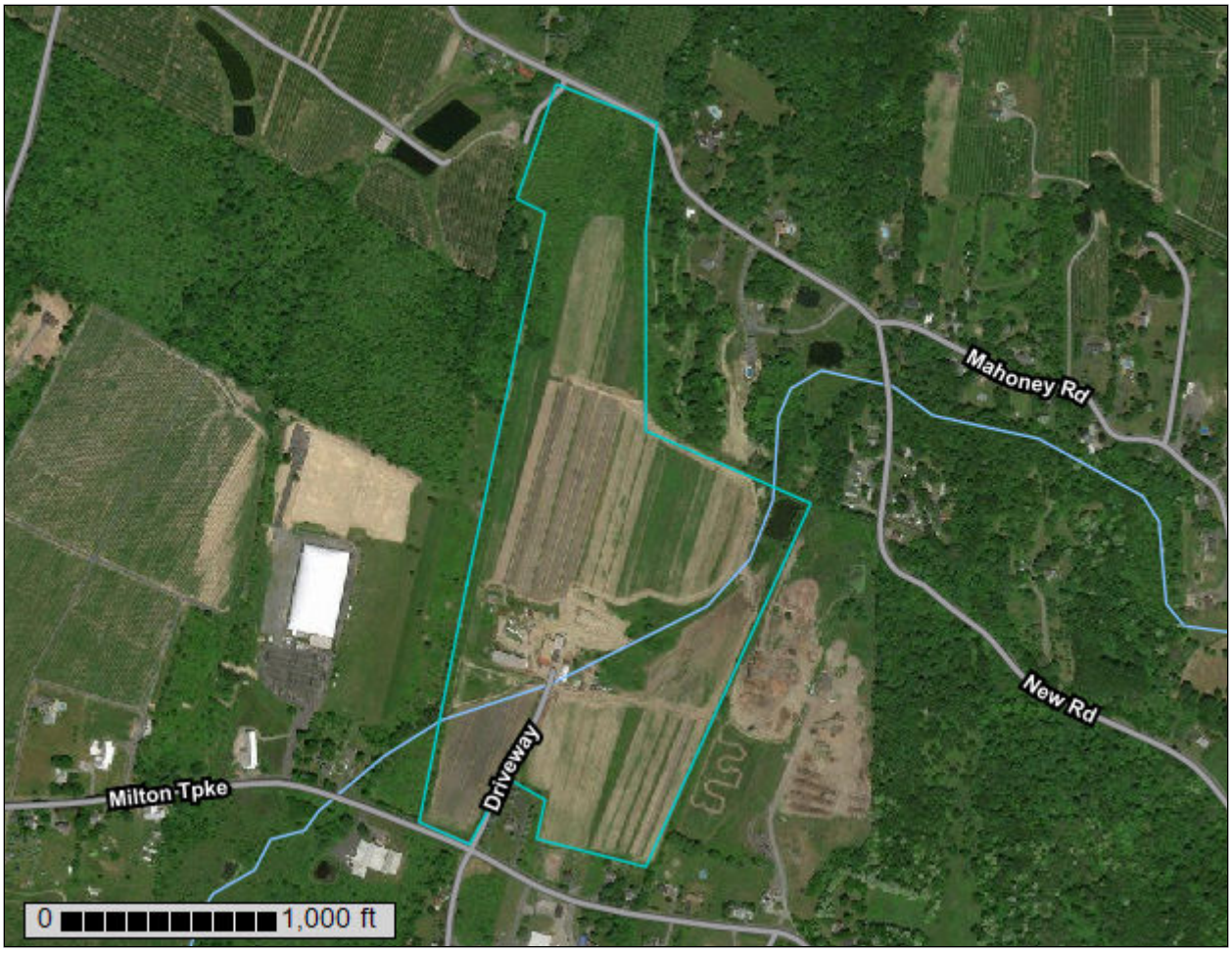
NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Ulster County, New York

Independent Solar, LLC



June 25, 2020

Preface

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

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

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

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

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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

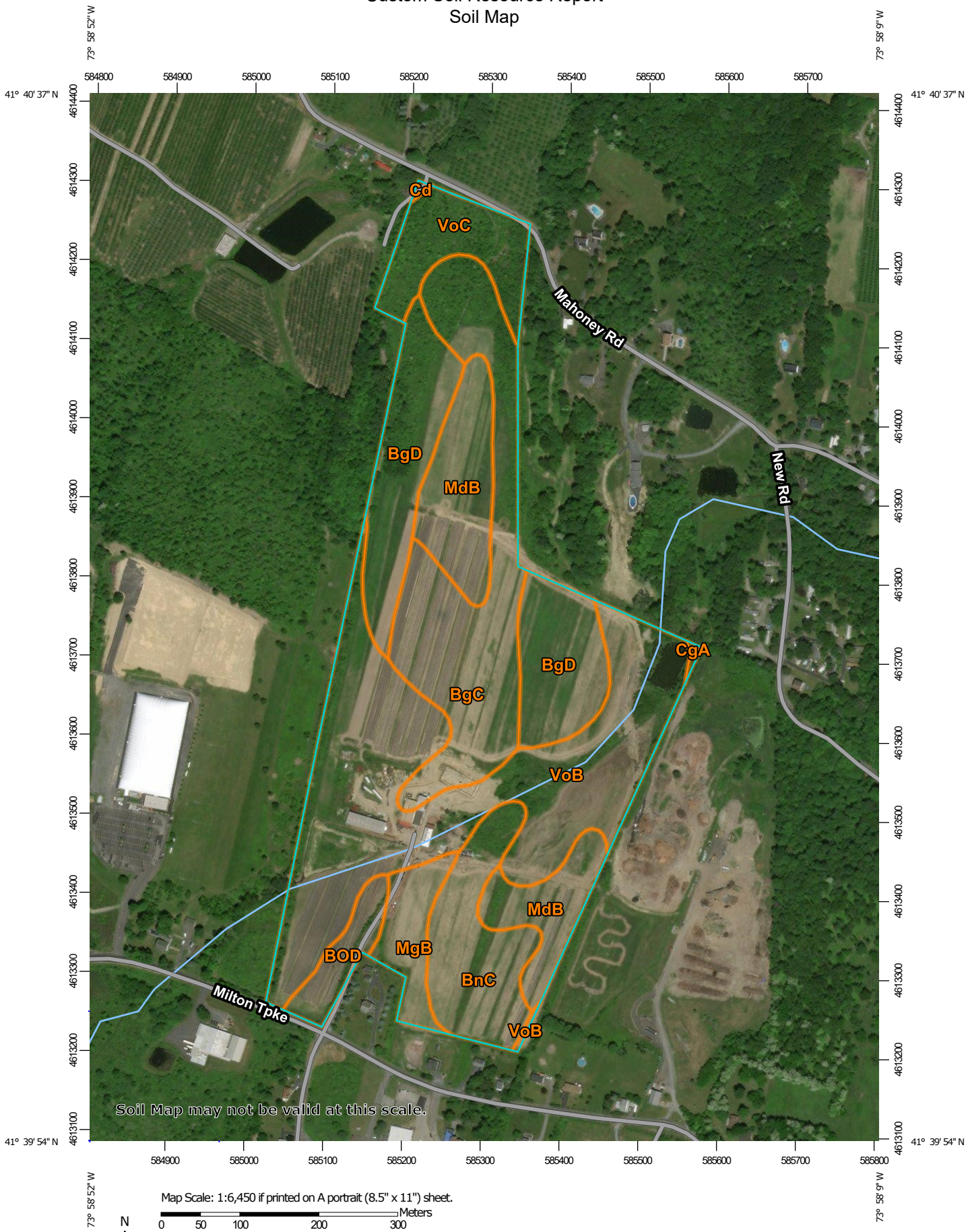
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,450 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ulster County, New York
Survey Area Data: Version 18, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
At	Atherton silt loam	0.1	0.1%
BgC	Bath gravelly silt loam, 8 to 15 percent slopes	14.0	18.7%
BgD	Bath gravelly silt loam, 15 to 25 percent slopes	11.4	15.2%
BnC	Bath-Nassau complex, 8 to 25 percent slopes	6.6	8.9%
BOD	Bath-Nassau-Rock outcrop complex, hilly	2.1	2.8%
Cd	Canandaigua silt loam, till substratum	0.1	0.1%
CgA	Castile gravelly silt loam, 0 to 3 percent slopes	0.0	0.0%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	8.8	11.7%
MgB	Mardin-Nassau complex, 3 to 8 percent slopes	2.8	3.8%
VoB	Volusia gravelly silt loam, 3 to 8 percent slopes	24.5	32.7%
VoC	Volusia gravelly silt loam, 8 to 15 percent slopes	4.5	6.0%
Totals for Area of Interest		**74.7**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

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

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

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

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

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

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

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

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Ulster County, New York

At—Atherton silt loam

Map Unit Setting

National map unit symbol: 9xfl
Elevation: 50 to 1,500 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Atherton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Atherton

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy glaciofluvial deposits over stratified deposits

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 19 inches: silt loam
H3 - 19 to 34 inches: gravelly loam
H4 - 34 to 65 inches: stratified very gravelly sandy loam to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Red hook

Percent of map unit: 5 percent
Hydric soil rating: No

Canandaigua
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lamson
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Raynham
Percent of map unit: 5 percent
Hydric soil rating: No

BgC—Bath gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9xfq
Elevation: 800 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Bath and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile
H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 55 inches: very gravelly loam
H4 - 55 to 65 inches: very gravelly loam

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: 26 to 38 inches to fragipan
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Mardin
Percent of map unit: 5 percent
Hydric soil rating: No

Lordstown
Percent of map unit: 5 percent
Hydric soil rating: No

Volusia
Percent of map unit: 5 percent
Hydric soil rating: No

Manlius
Percent of map unit: 5 percent
Hydric soil rating: No

BgD—Bath gravelly silt loam, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: 9xfr
Elevation: 800 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Bath and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 55 inches: very gravelly loam
H4 - 55 to 65 inches: very gravelly loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

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

Minor Components

Lordstown

Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Volusia

Percent of map unit: 5 percent
Hydric soil rating: No

Manlius

Percent of map unit: 5 percent
Hydric soil rating: No

Mardin

Percent of map unit: 5 percent
Hydric soil rating: No

BnC—Bath-Nassau complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9xft
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Bath and similar soils: 50 percent
Nassau and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting

Landform: Hills, till plains, drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 48 inches: very gravelly loam
H4 - 48 to 52 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan; 40 to 80 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

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

Description of Nassau

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Manlius

Percent of map unit: 5 percent
Hydric soil rating: No

Volusia

Percent of map unit: 5 percent
Hydric soil rating: No

Cambridge

Percent of map unit: 5 percent
Hydric soil rating: No

Hudson

Percent of map unit: 5 percent
Hydric soil rating: No

BOD—Bath-Nassau-Rock outcrop complex, hilly

Map Unit Setting

National map unit symbol: 9xfv
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Bath and similar soils: 40 percent
Nassau and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting

Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 48 inches: very gravelly loam
H4 - 48 to 52 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan; 40 to 80 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C
Hydric soil rating: No

Description of Nassau

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydric soil rating: Unranked

Minor Components

Manlius

Percent of map unit: 5 percent
Hydric soil rating: No

Mardin

Percent of map unit: 5 percent

Hydric soil rating: No

Volusia

Percent of map unit: 5 percent
Hydric soil rating: No

Hudson

Percent of map unit: 5 percent
Hydric soil rating: No

Cd—Canandaigua silt loam, till substratum

Map Unit Setting

National map unit symbol: 9xg0
Elevation: 100 to 1,200 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canandaigua and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canandaigua

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 37 inches: silt loam
H3 - 37 to 40 inches: silt loam
H4 - 40 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None

Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Lyons

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Raynham

Percent of map unit: 5 percent
Hydric soil rating: No

Atherton

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lamson

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

CgA—Castile gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9xg3
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Castile and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Castile

Setting

Landform: Valley trains, terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave

Across-slope shape: Convex
Parent material: Gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from sandstone, shale, and siltstone

Typical profile
H1 - 0 to 8 inches: gravelly silt loam
H2 - 8 to 19 inches: gravelly loam
H3 - 19 to 28 inches: very gravelly sandy loam
H4 - 28 to 60 inches: stratified very gravelly sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A/D
Hydric soil rating: No

Minor Components

Tunkhannock
Percent of map unit: 5 percent
Hydric soil rating: No

Hoosic
Percent of map unit: 5 percent
Hydric soil rating: No

Red hook
Percent of map unit: 5 percent
Hydric soil rating: No

Chenango
Percent of map unit: 5 percent
Hydric soil rating: No

MdB—Mardin gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2v30j
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F

Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Mardin

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 20 inches: gravelly silt loam
Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Bath

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Volusia

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

MgB—Mardin-Nassau complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2v30k
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Mardin and similar soils: 55 percent
Nassau and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 20 inches: gravelly silt loam
Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Nassau

Setting

Landform: Ridges, till plains, benches
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, linear
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Volusia

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Schoharie

Percent of map unit: 5 percent

Landform: Lake plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave
Across-slope shape: Convex, linear
Hydric soil rating: No

Manlius

Percent of map unit: 5 percent
Landform: Benches, ridges, till plains
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, linear
Hydric soil rating: No

Churchville

Percent of map unit: 5 percent
Landform: Till plains, lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, side slope, tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

VoB—Volusia gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2srf6
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Volusia

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 19 inches: gravelly silt loam
Bx - 19 to 58 inches: gravelly silt loam
C - 58 to 70 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Chippewa

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

Mardin

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

VoC—Volusia gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2srf7

Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Volusia

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 19 inches: gravelly silt loam
Bx - 19 to 58 inches: gravelly silt loam
C - 58 to 70 inches: gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Mardin

Percent of map unit: 6 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chippewa

Percent of map unit: 4 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

References

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

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

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

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

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

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

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

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

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

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

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf