NEW HAMPSHIRE WETLANDS PERMIT APPLICATION FOR THE ANTRIM WIND PARK PROJECT IN ANTRIM, NEW HAMPSHIRE

Submitted to:

NEW HAMPSHIRE SITE EVALUATION COMMITTEE

Submitted by:

Antrim Wind Energy 155 Fleet St. Portsmouth, NH 03801-0065

Prepared by:

TRC

14 Gabriel Drive

Augusta, ME 04330

July 2015



NHDES-W-06-012



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: http://des.nh.gov/onestop



RSA/Rule: Env-Wq 100-900

Administrative Use Only	Use		Administrative Use Only		Che	File No.: Check No.: Amount: Initials:	
1. REVIEW TIME: Indicate your Review Time below.	Refer to Guidance Document A for	or instructi	ons.				
⊠ Standard Review (Minir	mum, Minor or Major Impact)			Expedited R	eview (Mi	nimum Im	pact only)
2. PROJECT LOCATION: Separate applications must be file	d with each municipality that jurisc	dictional im	npacts v	will occur in.			
ADDRESS: 354 Keene Road					TOWN/CI	TY: Antr	im
TAX MAP: 212 ; 235 ; 236 ; 239	BLOCK:		LOT: 212-27,30,34; 2		l; 235-	UNIT:	
USGS TOPO MAP WATERBODY NA	ME:		⊠ NA	NA STREAM WATERSHED SIZE:		⊠ NA	
LOCATION COORDINATES (If known): N: 230,000 ft E: 890,000 ft UTM ☐ Latitude/Longitude ☐ UTM ☐ State Plane							
3. PROJECT DESCRIPTION: Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.							
The proposed Antrim Wind Energy Project is a wind energy generation facility to be located in Antrim, New Hampshire. The project will include the construction of nine (9) wind turbine generators, a substation, an operations and maintenance building, and assocaited access roads, crane pads, and stormwater management facilities. The proposed site is linear, running approximately norht to south along the ridge top of Tuttle Hill and spanning several individually owned parcels. The site will be accessed from State Route 9 (Keene Road).							
4. RELATED PERMITS, ENFOR		RIZATION	I, SHO	RELAND, AL	TERATIO	N OF TE	RRAIN, ETC
Existing Wetlands Bureau Permit No. 2012-00211 Existing A of T Bureau Permit No. SEC-0005							
5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS: See the Instructions & Required Attachments document for instructions to complete a & b below.							
a. Natural Heritage Bureau File II	D: NHB <u>15</u> - <u>1904 .</u>						
b. ☐ Designated River the projectiondate a copy of the applicate☒ NA	ect is in ¼ miles of: ion was sent to Local River Adviso				ay: Ye	ear:	-

6. APPLICANT INFORMATION (Desired permit holder)	7777			
LAST NAME, FIRST NAME, M.I.:	7			
TRUST / COMPANY NAME: Antrim Wind Energy, LLC	MAILING A	ADDRESS: 1	55 Fleet Street	
TOWN/CITY: Portsmouth	1		STATE: NH	ZIP CODE: 03801-405 0
EMAIL or FAX: generate@eolian-energy.com	PHON	E: 603-570	-4842	
ELECTRONIC COMMUNICATION: By initialing here:, I hereby aut	horize DES t	o communica	te all matters relative	to this application electronical
7. PROPERTY OWNER INFORMATION (If different than applican	it)			
LAST NAME, FIRST NAME, M.I.: See attached Exhibit 10				
TRUST / COMPANY NAME:	MAILING A	DDRESS:		
TOWN/CITY:			STATE:	ZIP CODE:
EMAIL or FAX:		PHONE:		
ELECTRONIC COMMUNICATION: By initialing here, I hereby authorized	orize DES to	communicate	all matters relative t	to this application electronically
8. AUTHORIZED AGENT INFORMATION			· · · · · · · · · · · · · · · · · · ·	
LAST NAME, FIRST NAME, M.I.: Valleau, Dana, B.		COMPANY NAME:TRC		
MAILING ADDRESS: 14 Gabriel Drive				
TOWN/CITY: Augusta			STATE: ME	ZIP CODE: 04330
EMAIL or FAX: dvalleau@trcsolutions.com	PHONE: 2	07-215-458	2	
ELECTRONIC COMMUNICATION: By initialing here DV , I hereby authorize	DES to com	municate all n	natters relative to this	s application electronically
PROPERTY OWNER SIGNATURE:See the Instructions & Required Attachments document for clarification				
By signing the application, I am certifying that:	of the belo	w statement	S	
1. I authorize the applicant and/or agent indicated on this form to ac	ct in mv bel	nalf in the or	ocessing of this an	inlication and to fine lab
 I have reviewed and submitted information & attachments outline All abutters have been identified in accordance with RSA 482-A: 	ed in the Ins	structions and	d Required Attach	ment document.
4. I have read and provided the required information outlined in Envi	-Wt 302 04	for the anni	icable project to	ı.
5. I have read and understand Env-Wt 302.03 and have chosen the	least impa	cting alterna	tivo	
 Any structure that I am proposing to repair/replace was either pregrandfathered per Env-Wt 101.47. 				
7. I have submitted a Request for Project Review (RPR) Form (www (SHPO) at the NH Division of Historical Resources to be reviewe 8. Lauthorize DES and the municipal consortation.	v.nh.gov/nh	ndhr/review)	to the NH State Hi	storic Preservation Officer
- additionable bed and the municipal conservation commission to in	spect the s	ite of the pro	nacad prainet	
 I have reviewed the information being submitted and that to the b I understand that the willful submission of falsified or misrepresent Environmental Services is a criminal act, which may result in legal 	est of my k	noudodae th	a info	e and accurate.
I. I am aware that the work I am proposing may require additional st	tate local o	or federal ner	mits which I am re	enoncible for obtaining
 The mailing addresses I have provided are up to date and appropreturned mail. 	riate for re	ceipt of DES	correspondence.	DES will not forward
	N.F	n)		
John B	. Kash	orthn	712	115
Property Owner Signature Print name legil			Data	

<u>shoreland@des.nh.gov</u> or (603) 271-2147
NHDES Wetlands Bureau, Concord, NH 03303-0095
<u>www.des.nh.gov</u>

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

- 1. Waives its right to intervene per RSA 482-A:11;
- 2. Believes that the application and submitted plans accurately represent the proposed project; and
- 3. Has no objection to permitting the proposed work.

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Print name legibly

Date

DIRECTIONS FOR CONSERVATION COMMISSION

- 1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
- 2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
- 3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.



Town/City Clerk Signature

Print name legibly

Town/City

Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

- 1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
- 2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
- 3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
- 4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
- 5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

12. IMPACT AREA: For each jurisdictional area that will Permanent: impacts that will remain	The state of the s	uare feet and, if	applicable, linear fe	eet of impact	
<u>Temporary</u> : impacts not intended to		e-construction c	•		
JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.			TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	5,896	☐ ATF			ATF
Scrub-shrub wetland	2,270	☐ ATF			ATF
Emergent wetland	955	ATF			ATF
Wet meadow		☐ ATF			ATF
Intermittent stream	156	ATF			ATF
Perennial Stream / River	296 / 74	☐ ATF		1	ATF
Lake / Pond	1	ATF		1	ATF
Bank - Intermittent stream	1	☐ ATF		1	ATF
Bank - Perennial stream / River	1	☐ ATF		1	ATF
Bank - Lake / Pond	1	☐ ATF		1	ATF
Tidal water	1	☐ ATF		1	ATF
Salt marsh		☐ ATF			ATF
Sand dune		ATF			ATF
Prime wetland		☐ ATF			ATF
Prime wetland buffer		ATF			ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF			ATF
Previously-developed upland in TBZ		☐ ATF			ATF
Docking - Lake / Pond		☐ ATF			ATF
Docking - River		☐ ATF			ATF
Docking - Tidal Water		☐ ATF			ATF
TOTAL	9,573 / 74			1	
13. APPLICATION FEE: See the In	nstructions & Required Attachments	s document for	further instruction		
☐ Minimum Impact Fee: Flat fee	of \$ 200				
	culate using the below table below				
Permanen	t and Temporary (non-docking)	9,573 so	q. ft. X \$0.20 =	\$ 1,914.60	
Temporal	Temporary (seasonal) docking structure: sq. ft. X \$1.00 =				
	Permanent docking structure:	sc	q. ft. X \$2.00 =	\$	
Proje	cts proposing shoreline structur	es (including o	docks) add \$200 =	\$	
			Total =	\$	
The Applica	tion Fee is the above calculated To	otal or \$200, wh	ichever is greater =	\$ 1,914.60	



WETLANDS PERMIT APPLICATION – ATTACHMENT A MINOR AND MAJOR - 20 QUESTIONS

Water Division/ Wetlands Bureau/ Land Resources Management Check the Status of your application: http://des.nh.gov/onestop



RSA/ Rule: RSA 482-A, Env-Wt 100-900

<u>Env-Wt 302.04 Requirements for Application Evaluation</u> - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

Impacts to wetlands have been avoided and minimized to the greatest extent practical. Turbine, access road, substation, and collector system facilities have been carefully sited to meet design, operational, and safety needs while avoiding and minimizing impacts to natural resources, including wetlands.

Ten identified wetlands will be impacted either temporarily or permanently as a result of Project construction and operation. No jurisdictional vernal pools, or areas currently described as potential vernal pools will be impacted as a result of Project construction or operation. In total, approximately 0.22 acre (9,573 square feet) of wetland and stream impact are expected to be incurred as a result of construction and operation of the proposed project. Forested and scrub-shrub wetland fill impacts total approximately 9,121 square feet and stream impacts from culvert placement for two road crossings total approximately 452 square feet. This small amount of impact is the result of careful Project planning and design, which aimed to avoid and minimize impacts to these important resources. The direct wetland impacts are those which were deemed unavoidable during the Project planning process.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

During the development of the Project the AWE made significant efforts to avoid and minimize impact to wetlands and surface waters. Prior to siting of any facilities, AWE conducted a reconnaissance survey for sensitive resources, including wetlands, streams and natural communities. Once these areas were identified, facilities were sited and formal delineations were conducted. During detailed design of the facility, numerous revisions were made to the iterative Project layout design process to further reduce the level of impact of the Project. However, due to design and construction constrains of wind projects in New England, some level of wetland impact was unavoidable. AWE believes that the Project, as presented, represents the lowest possible degree of impact to wetlands and surface waters. For additional information on the alternatives evaluated for this Project, please refer to Section I of the SEC Application.

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3.	The type and	classification	of the	wetlands	involved.
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Detailed narrative descriptions of all identified wetland features relevant to the Project are provided in the full Wetland Delineation Report, which is provided in Exhibit 5 of this Wetlands Permit Application.

In general, wetlands within the Project area consist primarily of small forested wetlands that occur along skidder trails, in confined pockets in the regional bedrock, in saddle areas along the ridgeline, and in areas with poorly drained soils that support wetland vegetation. Streams within the Project area include unnamed perennial and intermittent streams which drain either to the north toward Route 9, or to the southeast into Gregg Lake. Because the proposed Project area is along a ridgeline and is moderately well drained, very few perennial streams occur. Observations in the field generally suggest that rainfall and snow-melt quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds.

A total of ten wetlands will be impacted by Project operation and development. Seven of these are palustrine forested wetlands (five PFO1 and two PFO4), and three are palustrine scrub-shrub wetlands (PSS1), two of which are in maintained electric transmission ROW and the other is in an inactive borrow pit. For detailed descriptions of these wetlands, please see the Wetland Delineation Report, Exhibit 5 of this Application, Table 4-1, pages 7-9.

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The locations of wetlands to be impacted relative to nearby wetlands and surface waters are illustrated in Appendix A, Figure 2, Maps 1-4 provided in the Wetland Delineation Report, which is Exhibit 5 of this Application.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

None of the wetlands or surface waters impacted by the Project is considered rare.

6. The surface area of the wetlands that will be impacted.

In total, approximately 0.22 acre (9,573 square feet) of wetland and stream impact are expected to be incurred as a result of construction and operation of the proposed project. Forested and scrub-shrub wetland fill impacts total approximately 9,121 square feet and stream impacts from culvert placement for two road crossings total approximately 452 square feet. Specific impacts to wetlands and streams are described in Tables 4-1 and 4-2 of the Wetland Delineation Report, which is provided in Exhibit 5 of this Application.

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7.	The impact on plants, fish and wildlife including, but not limited to: a. Rare, special concern species; b. State and federally listed threatened and endangered species; c. Species at the extremities of their ranges; d. Migratory fish and wildlife; e. Exemplary natural communities identified by the DRED-NHB; and f. Vernal pools.
	The Project does not expect to have an undue adverse impact on fish and wildlife species. A detailed discussion of the fish and wildlife impacts associated with the Project is included in Section J of the SEC Application and associated appendices. a. Rare, special concern species; b. State and federally listed threatened and endangered species; c. Species at the extremities of their ranges; d. Migratory fish and wildlife; e. Exemplary natural communities identified by the DRED-NHB; and f. Vernal pools.
8.	The impact of the proposed project on public commerce, navigation and recreation.
	A detailed discussion of impact of the Project on public commerce, navigation and recreation is included in Section K of the SEC Application.
9.	The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.
	A detailed discussion of the aesthetic impact of the Project is included in Section J of the SEC Application and associated appendix. The Project does not anticipate having an undue adverse impact.

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10.	The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.
	The Project is located entirely on private land and any land access is granted at the will of the landowners. The Project will limit access to their immediate project facilities and access to the remainder of the property will remain at the landowner's will. Please see Section J.6 of the SEC application for a further discussion of public rights of passage or access.
11.	The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.
	No wetland impacts will occur within 20 feet of adjacent property boundaries. All abutting property owners will be notified of the proposed project in accordance with NHDES rules. Documentation of this notification is found in Exhibit 4 The benefit of a project to the bealth sofety, and well being of the general public.
	The benefit of a project to the health, safety, and well being of the general public. Public health and safety impacts of the Project are discussed in Section J of the SEC Application.
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13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

Due to the lack of groundwater resources on the site, this project is not expected to have any direct or indirect impacts on groundwater drinking resources. The AWE site does not have any aquifers on the project site and there are no source water protection and/or well head protection areas on or adjacent to the site. The closest public water supply well is 1.06 miles from the project development. The project does not propose to make large groundwater withdrawals and thus will have no effect on groundwater supply.

Most of the site is made up of stony soils that are relatively shallow in depth to bedrock, and observations in the field generally suggest that rainfall and snow melt in the spring quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds. The small forested wetland areas on the site occur along skidder trails, confined pockets in the regional bedrock, and in saddle areas along the ridgeline. These type of soils limit the value of these wetlands for groundwater recharge. Additionally, wetlands with peaty, organic soils increase the retention time of water, slowing recharge.

The limited ability of the site wetlands to recharge groundwater combined with limited sources of potential project pollutants that would adversely affect the quality of the groundwater results in a very low potential for this project to adversely affect groundwater quality.

The majority of wetlands in the project are perched with shallow depths to bedrock or impervious soils and rely on precipitation, surface sheet flow, and shallow subsurface flows for maintenance of wetland hydrology. There are a few wetlands occurring along benches at the toe of steep slopes where the hydrology of the wetland relies primarily on the discharge of groundwater from breakout seeps. Because the project has minimal wetland impacts (0.19 acres of impact total in 10 distinct wetland areas) and proposes to maintain natural flow patterns to the extent practical, there should be minimal change in groundwater discharge patterns to wetlands.

The intent in the project development has been to minimize surface water and stormwater runoff impacts starting with the initial field survey work through the design phase and by implementing accepted erosion control and stormwater Best Management Practices (BMPs) during construction and operation of the facility. During the field survey portion of the project, areas of drainage including jurisdictional wetland and streams as well as non-jurisdictional drainage (to the extent possible) were mapped during field surveys. The design phase included maintaining natural drainage patterns where possible through the use of culverts and subsurface stone drainage ways (stone mattresses). During construction, field drainage conditions will be taken into consideration, and there will be flexibility to install appropriate measures to maintain drainage. Any runoff from the roads will be routed into undisturbed buffers to help maintain water quality and disperse and distribute water volumes to approximate pre-development flows.

Additional erosion control and stormwater BMPs to protect surface water quality during construction of this project have focused on control of erosion during construction through use of sediment barriers and the use of soil stabilization measures including erosion control blankets, spray-on polymer emulsions, and prompt stabilization of exposed surfaces. See the Civil Design Plans at Exhibit 7A of the SEC Application. The proposed development will alter approximately 57 acres of land. In order to evaluate the project's effect on peak stormwater runoff rates, a hydrologic model was developed to evaluate the existing and proposed drainage conditions on the site. The results of the analyses indicate that there is no significant change in peak discharge rates between the pre- and post-development conditions for the 2, 10, and 50 year storm events (See

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the stormwater management plans included in the Alteration of Terrain permit application included as Appendix 2B of the SEC application). 14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation. The project is not located in a mapped floodplain. The project has been designed in conformance with standard best management practices for wind park construction and stormwater management. Details of the stormwater management plans for the Project are included in the Alteration of Terrain permit application included as Appendix 2B of the SEC Application. 15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards. Since there are no large open bodies of water being impacted by the project, wave energy will not be affected. Two small streams are being affected by the Project, however proposed redevelopment of the site will not redirect the current. Stream crossings have been designed in accordance with the New Hampshire Stream Crossing Guidelines to the extent practicable to minimize the potential for erosion resulting from new crossings. 16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted. AWE has leased approximately 1,870 acres of private land on six landowners for the development of the Project. All wetlands that will be impacted by the Project are located entirely within these parcels.

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17.	The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The AWE project has been designed to avoid and minimize impacts on wetlands to the extent practicable. This started with desktop review of readily available information including USGS and NWI mapping to identify the field survey area. The initial assessment of the field survey corridor started with investigation for vernal pools as snow cover left the site and later for wetlands. As it was determined there would be wetland impacts and needs for changes in project alignment and design, additional survey area was added and investigated for natural resources. This is typical of an iterative process that continued throughout the period of resource delineation and civil design (May – October, 2011; September 2014).

The total permanent impact to wetlands and surface water resources is approximately 0.21 acres. This wetland impact is only 0.3 percent of the land area to be disturbed by this project (57.3 acres). The primary function of wetlands on the project site is wildlife habitat. The very small area of impact inherently limits the amount of impact to this function. Additionally the narrow, linear nature of these impacts (primarily from gravel roads) further limits impact to this function. The one perennial stream crossing has been designed with an open bottom arch culvert which will allow for maintenance of the natural substrates and unrestricted flows along the natural channel.

There are indirect impacts from road construction and a turbine pad to vernal pool terrestrial habitat (VP1, 2, 3, and 7), however these impacts are only to upland area and do not include any impact to the associated wetlands. It is not anticipated that these impacts will adversely affect the productivity of these pools. There is no direct impact to any of the vernal pool breeding habitats (depression). See the attached Vernal Pool Report at Exhibit 6 for additional information.

18.	The impact upon the value of the sites included in the latest published edition of the National Register of Natural
	Landmarks, or sites eligible for such publication.

An evaluation of the impact of the Project on historic sites is included in Section J and Appendices 9D through 9G of the SEC Application.

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19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, nation wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.	
No such areas have been identified within the Project area.	
20. The degree to which a project redirects water from one watershed to another.	
The Project has been designed to minimize the impacts to hydrology on the site and minimize the interrupti	on
of the natural flow. Details of the design can be found in the Alteration of Terrain permit application included as Appendix 2B of the SEC Application.	
included as Appendix 2B of the SEC Application.	
Additional comments	
Additional confinents	

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EXHIBIT 1 COPY OF APPLICATION CHECK

Antrim Wind Energy LLC 155 Fleet Street Portsmouth, NH 03801 603-570-4842



001459 54-202/114

7/3/2015

DATE _____

PAY TO THE ORDER OF Treasurer State of New Hampshire

**1,914.60

One Thousand Nine Hundred Fourteen and 60/100*********

DOLLARS

State of New Hampshire Treasury 25 Capitol Street, Room 121 Concord, NH 03301

Memo

Wetlands Permit Application Fee

AUTHORIZED SIGNATURE

"OO 1459" 1:0 1 1 4 0 20 24 1: 10 10 1 25 3 5 4 11 1

Antrim Wind Energy LLC

Treasurer State of New Hampshire

Wetlands Permit App Fee

7/3/2015

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Eastern Checking

Wetlands Permit Application Fee

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Antrim Wind Energy LLC

Treasurer State of New Hampshire

7/3/2015

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Wetlands Permit App Fee

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New Hampshire Wetland Permit Applicati	New	Hampshire	Wetland	Permit A	Application
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EXHIBIT 2 NEW HAMPSHIRE NATURAL HERITAGE BUREAU LETTERS

Memo



To: Dana Valleau, TRC Environmental Corp.

14 Gabriel Drive Augusta, ME 04330

From: Amy Lamb, NH Natural Heritage Bureau

Date: 6/11/2015 3:14:08 PM (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB15-1904 Town: Antrim Location: Tax Maps: Maps 212, 235, 236, 239;

Lots 212-7, 30&34; 235-14; 236-1&2;

239-1

Description: The project is a wind power project located along Tuttle Hill.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: NHB requests surveys for the endangered plant species and exemplary natural community indicated below. Please send the requested information to: Amy.Lamb@dred.nh.gov. Please coordinate with Kim Tuttle of NH Fish & Game for wildlife concerns.

Invertebrate Species	State	Federal	Notes
Ebony Boghaunter (Williamsonia fletcheri)	SC	-17	Contact the NH Fish & Game Dept (see below).
Natural Community	State ¹	Federal	Notes
Inland Atlantic white cedar swamp		<u>/</u> -	Changes to the hydrology of the wetland are the greatest threat facing the cedar swamp. Damming which causes pooling for extended periods can flood and drown existing trees, and drainage that results in lower water levels can lead to invasion by other species that can out compete and eventually eliminate Atlantic white cedar trees. Increased nutrient input from stormwater runoff could also deleteriously impact this acidic, low-nutrient plant community.
Plant species	State ¹	Federal	Notes
Canada shore quillwort (Isoetes riparia var. canadensis)	Е		Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
Vertebrate species	State ¹	Federal	Notes
Marsh Wren (Cistothorus palustris)			Contact the NH Fish & Game Dept (see below).

Memo



Wood Turtle (Glyptemys insculpta)

SC

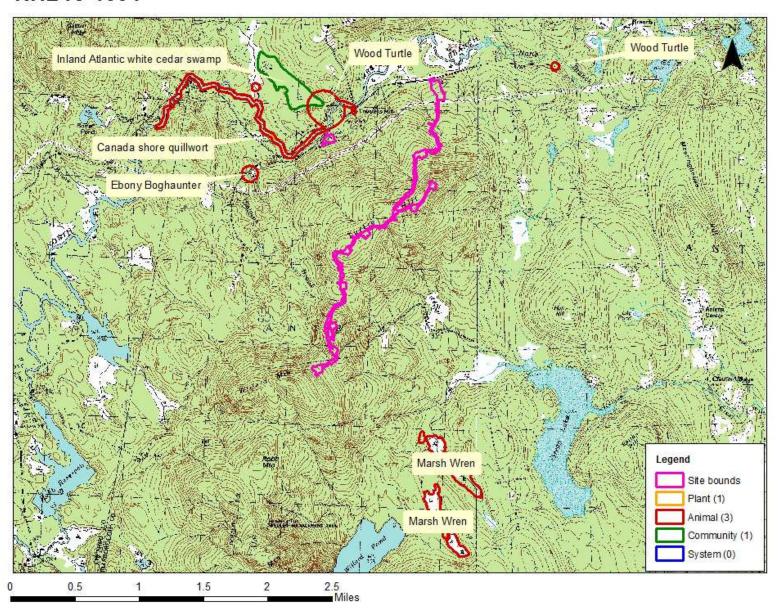
-- Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

NHB15-1904



NHB15-1904 EOCODE: IIODO34010*027*NH

New Hampshire Natural Heritage Bureau - Animal Record

Ebony Boghaunter (Williamsonia fletcheri)

Legal Status Conservation Status

Federal: Not listed Global: Apparently secure but with cause for concern

State: Special Concern State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked

Comments on Rank:

Detailed Description: 2003: Area 1: Species observed on 5/30.

General Area:
General Comments:
Management
Comments:

Location

Survey Site Name: Salmon Brook

Managed By: The Nature Conservancy #2

County: Hillsborough Town(s): Antrim

Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2003-05-30 Last reported: 2003-05-30

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB15-1904 EOCODE: CP00000157*001*NH

New Hampshire Natural Heritage Bureau - Community Record

Inland Atlantic white cedar swamp

Legal Status Conservation Status

Federal: Not listed Global: Not ranked (need more information)

State: Not listed State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).

Comments on Rank: This site is probably the best, largest and most viable remaining cedar swamp in the western

part of the state. It should remain among the highest conservation priorities in the state.

Detailed Description: 2006: Community observed and photographed. 2004: Community observed and

photographed. 1993: Chamaecyparis thyoides (Atlantic white cedar) is the dominant tree with both Acer rubrum (red maple) and Picea rubens (red spruce) present in abundance. Picea mariana (black spruce) is scattered and less abundant. Occasionally, Pinus strobus (white pine) and Betula alleghaniensis (yellow birch) are also found. Dominant shrub species are Gaylussacia baccata (black huckleberry), Nemopanthus mucronatus (mountain holly), Ilex laevigata (smooth winterberry), and Kalmia angustifolia (sheep laurel). Common boreal components present are Chamaedaphne calyculata (leatherleaf), Gaultheria hispidula (creeping snowberry), and Ledum groenlandicum (Labrador tea). The herbaceous layer is fairly abundant, although richness is somewhat limited. Osmunda cinnamomea (cinnamon fern), Aralia nudicaulis (wild sarsaparilla), Maianthemum canadense (Canada mayflower), Sarracenia purpurea (pitcher-plant) and Carex trisperma (three-seeded sedge) are commonly present. Sphagnum species are abundant. 1990: Has Chamaecyparis thyoides(Atlantic white cedar) to 14 inches dbh and a few larger individuals, abundant in areas away from streams. Picea mariana (black spruce), Picea rubens (red spruce), Abies balsamea (balsam fir), and Acer rubrum (red maple) also occur. Lesser amounts of Pinus

strobus (white pine).

General Area: 1993: Soil type is a mucky peat, with the peat deposits averaging <1 meter. The soil is

permanently saturated with a couple of obvious watercourses present. The pH of the groundwater is quite acidic with a range of 3.8-4.0. 1990: Purest and largest cedar around open black spruce bog (90 percent, 10-14 inches average range). Other areas 50-80 percent. Basin is surrounded by gradually sloping uplands which are punctuated by a number of small cliffs. 1961 (Baldwin): a fairly large boggy swamp with *Chamaecyparis thyoides* (Atlantic

white cedar). Contains 6 stands of cedar.

General Comments: 1997: New community boundaries mapped based on 1993 field work. 1990: Encroaching

urban development.

Management Comments:

Location

Survey Site Name: Loverens Mill Cedar Swamp Managed By: Loverens Mill Preserve

County: Hillsborough Town(s): Antrim

Size: 51.3 acres Elevation: 1080 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: From Hillsboro, take Rte. 9 south ca. 5 miles south to Holmes Hill Road. Turn right (north) onto

Holmes Hill. Park on the right immediately after crossing the bridge over the river, at the TNC preserve sign kiosk. After ca. 900 feet there will be a gravel road on the left. This is the trailhead. Take the marked trail on this road, up past the old mill, and look for a turnoff to the right. Proceed

down this trail (N-NW). The cedar swamp is at the bottom of the basin, to the north.

NHB15-1904 EOCODE: CP00000157*001*NH

Dates documented

First reported: 1961 Last reported: 2006-06-13

NHB15-1904 EOCODE: PPISO010J4*015*NH

New Hampshire Natural Heritage Bureau - Plant Record

Canada shore quillwort (Isoetes riparia var. canadensis)

Legal Status Conservation Status

Federal: Not listed Global: Not ranked (need more information)

State: Listed Endangered State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).

Comments on Rank: Likely extensive habitat, good population condition, and good landscape context.

Detailed Description: 2009: 200-250 stems, 95% dispersing seeds.1997, 1995?: No details.

General Area: 2009: Fourth-order stream/river. Associated species include royal fern (Osmunda regalis var.

spectabilis), water bulrush (Schoenoplectus subterminalis), and several species of algae.

General Comments: 2009: The population is further downstream from where it was first located in the mid-

1990s. There are larger numbers of individuals. The presence of potential hybrids in the area

suggest that there is some dynamism to the long-term occurrence.

Management 2009: Some potential damage from bathers in summer who use the rest area, although it is

Comments: downstream.

Location

Survey Site Name: Loverens Mill, west of Managed By: The Nature Conservancy #2

County: Hillsborough Town(s): Antrim

Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Take Rte. 9 west from Hillsboro to the only rest area on the north side of the highway in

Antrim. Park in the lot and proceed down a trail behind the station to the [North Branch of the] Contoocook River. Head downstream about 250 ft. until the river makes a sharp bend to the south. Look in the current and backwater area above the shallow ledge (above the drop) in 0.5 to 1.5 feet of

water amidst cobbles and gravels.

Dates documented

First reported: 1993-1998 Last reported: 2009-09-20

NHB15-1904 EOCODE: ABPBG10020*011*NH

New Hampshire Natural Heritage Bureau - Animal Record

Marsh Wren (Cistothorus palustris)

Legal Status Conservation Status

Federal: Not listed Global: Demonstrably widespread, abundant, and secure

State: Not listed State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked

Comments on Rank:

Detailed Description: 2002: 5 observed on 6/18, 1 seen gathering nesting material.

General Area:
General Comments:
Management
Comments:

Location

Survey Site Name: Willard Pond, NE of

Managed By:

County: Hillsborough Town(s): Antrim

Size: 66.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2002-06-18 Last reported: 2002-06-18

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB15-1904 EOCODE: ARAAD02020*130*NH

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (Glyptemys insculpta)

Legal Status Conservation Status

Federal: Not listed Global: Apparently secure but with cause for concern

State: Special Concern State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).

Comments on Rank:

Detailed Description: 2010: Area 12723: 1 adult observed. 2009: Area 12334: 1 observed. 2008: Area 11603: 1

adult seen. 2006: Area 11693: 1 adult seen. 2005: Area 12135: 1 adult seen. 2002: Area

12069: 1 observed.

General Area: 2010: Area 12723: Roadside along river.2005: Area 12135: Crossing highway towards North

Branch of Contoocook River. 2002: Area 12069: Near cedar swamp.

General Comments:

Management Comments:

Location

Survey Site Name: Loverens Mill

Managed By: The Nature Conservancy #2

County: Hillsborough Town(s): Antrim

Size: 88.3 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 12723: Rte. 9 in Antrim. 2009: Area 12334: TNC property at Loverens Mill. Drainage

into North Branch Contoocook River. 2008: Area 11603: TNC property at Loverens Mill Road.

2002: Area 12069: Loverens Mill property near trail to cedar swamp.

Dates documented

First reported: 2002-07-28 Last reported: 2010-08-05

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS
172 PEMBROKE ROAD, CONCORD, NH O3301
(603) 271-2214

To: Dana Valleau, Environmental Specialist, TRC

From: Amy Lamb, Ecological Information Specialist, NHB

Date: June 26, 2015

Subject: Re: NHB15-1904, NHB10-0644: Antrim Wind Energy, LLC

This is a follow-up to NHB15-1904, which indicated the presence of an exemplary natural community, an Inland Atlantic white cedar swamp, and a state endangered plant, Canada shore quillwort (*Isoetes riparia var. canadensis*), close to the proposed project area. The report also indicated the presence of three wildlife species; please note that the Natural Heritage Bureau does not provide comments regarding wildlife, and that there must be consultation with the NH Fish and Game Department for all wildlife concerns.

In the NHB15-1904 review, we requested that the project area be surveyed for the occurrence of the rare species and natural community within the project area. After this initial recommendation, it came to my attention that community mapping had occurred throughout the project area, through consultation with Melissa Coppola under project number NHB10-0644. Based on the results of those surveys, NHB does not find it likely that the natural community and rare plant identified in NHB15-1904 would be found on the property. As such, NHB no longer recommends a survey for Canada shore quillwort or Inland Atlantic white cedar swamp in the project area.

We look forward to continued communication throughout the SEC process. Please send us any additional application materials as they become available, and include us in any future communications regarding the subject project.



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS
PO BOX 1856 -- 172 PEMBROKE ROAD, CONCORD, NH 03302-1856
(603) 271-2214

To: Site Evaluation Committee

From: Melissa Coppola, Environmental Information Specialist

Date: August 2, 2012

Subject: Final Report: Site Evaluation Committee #2012-01

Application for Antrim Wind Energy, LLC

The Natural Heritage Bureau (NHB), under the auspices of the NH Native Plant Protection Act of 1987 (RSA 217-A), has reviewed the application materials for Antrim Wind Energy, LLC.

NHB had requested a final site visit during the growing as a last review step. This site review was conducted on 13 July 2012. The purpose of the visit was to search for a state-listed plant species within a few targeted natural community types with greater potential for rare species. No rare plant species were observed during the surveys.

Based on the observations made during the site visit and the application materials provided, NHB has determined that it is unlikely that the proposed wind facility will impact rare plants species or exemplary natural communities.

Memo



To: James Kenworthy, Eolian Renewable Energy, LLC

55 Fleet St.

Portsmouth, NH 03801

From: Melissa Coppola, NH Natural Heritage Bureau
Date: 3/22/2010 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB10-0644 Town: Antrim

Project type: Roads, Driveways, Bridges: Road Location: Tax Maps: 212-030, 212-027, 212-034, 211-004, 235-014

construction, etc.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: NHB has concerns about potential impacts to the exemplary natural community. Please send detailed site plans to mcoppola@dred.state.nh.us for further review.

Natural Community	State ¹	Federal	Notes
Inland Atlantic white cedar swamp	7	7	Changes to the hydrology of the wetland are the greatest threat facing the cedar swamp. Damming which causes pooling for extended periods can flood and drown existing trees, and drainage that results in lower water levels can lead to invasion by other species that can out compete and eventually eliminate Atlantic white cedar trees. Increased nutrient input from stormwater runoff could also deleteriously impact this acidic, low-nutrient plant community.

Vertebrate species	State ¹ Federal	Notes
Wood Turtle (<i>Glyptemys insculpta</i>)	SC	Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. For some purposes, including legal requirements for state wetland permits, the fact that no species of concern are known to be present is sufficient. However, an on-site survey would provide better information on what species and communities are indeed present.

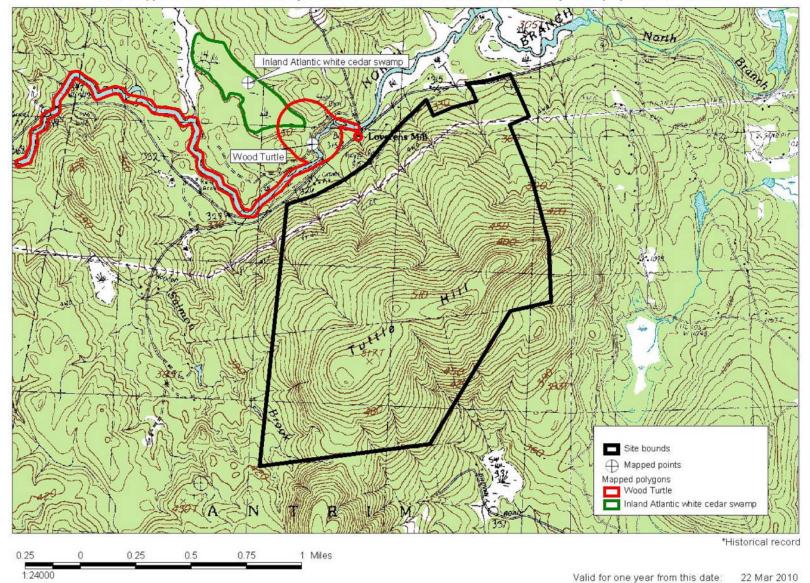
Department of Resources and Economic Development Division of Forests and Lands (603) 271-2214 fax: 271-6488

NHB10-0644

NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



NHB10-0644 EOCODE: CP00000157*001*NH

New Hampshire Natural Heritage Bureau - Community Record

Inland Atlantic white cedar swamp

Legal Status Conservation Status

Federal: Not listed Global: Not ranked (need more information)

State: Not listed State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and lanscape context ('A' on a scale of A-D).

Comments on Rank: This site is probably the best, largest and most viable remaining cedar swamp in the western

part of the state. It should remain among the highest conservation priorities in the state.

Detailed Description: 2006: Community observed and photographed. 2004: Community observed and

photographed. 1993: Chamaecyparis thyoides (Atlantic white cedar) is the dominant tree with both Acer rubrum (red maple) and Picea rubens (red spruce) present in abundance. Picea mariana (black spruce) is scattered and less abundant. Occasionally, Pinus strobus (white pine) and Betula alleghaniensis (yellow birch) are also found. Dominant shrub species are Gaylussacia baccata (black huckleberry), Nemopanthus mucronatus (mountain holly), Ilex laevigata (smooth winterberry), and Kalmia angustifolia (sheep laurel). Common boreal components present are Chamaedaphne calyculata (leather-leaf), Gaultheria hispidula (creeping snowberry), and Ledum groenlandicum (Labrador-tea). The herbaceous layer is fairly abundant, although richness is somewhat limited. Osmunda cinnamomea (cinnamon fern), Aralia nudicaulis (wild sarsaparilla), Maianthemum canadense (Canada mayflower), Sarracenia purpurea (pitcher-plant) and Carex trisperma (three-seeded sedge) are commonly present. Sphagnum species are abundant. 1990: Has Chamaecyparis thyoides(Atlantic white cedar) to 14 inches dbh and a few larger individuals, abundant in areas away from streams. Picea mariana (black spruce), Picea rubens (red spruce), Abies balsamea (balsam fir), and Acer rubrum (red maple) also occur. Lesser amounts of Pinus

strobus (white pine).

General Area: 1993: Soil type is a mucky peat, with the peat deposits averaging <1 meter. The soil is

permanently saturated with a couple of obvious watercourses present. The pH of the groundwater is quite acidic with a range of 3.8-4.0. 1990: Purest and largest cedar around open black spruce bog (90 percent, 10-14 inches average range). Other areas 50-80 percent. Basin is surrounded by gradually sloping uplands which are punctuated by a number of small cliffs. 1961 (Baldwin): a fairly large boggy swamp with *Chamaecyparis thyoides* (Atlantic

white cedar). Contains 6 stands of cedar.

General Comments: 1997: New community boundaries mapped based on 1993 field work. 1990: Encroaching

urban development.

Management Comments:

Location

Survey Site Name: Loverens Mill Cedar Swamp Managed By: Loverens Mill Preserve

County: Hillsborough USGS quad(s): Stoddard (4307211) Town(s): Antrim Lat, Long: 430433N, 0720142W

Size: 51.3 acres Elevation: 1080 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: From Hillsboro, take Rte. 9 south ca. 5 miles south to Holmes Hill Road. Turn right (north) onto

Holmes Hill. Park on the right immediately after crossing the bridge over the river, at the TNC preserve sign kiosk. After ca. 900 feet there will be a gravel road on the left. This is the trailhead. Take the marked trail on this road, up past the old mill, and look for a turnoff to the right. Proceed

down this trail (N-NW). The cedar swamp is at the bottom of the basin, to the north.

NHB10-0644 EOCODE: CP00000157*001*NH

Dates documented

First reported: 1961 Last reported: 2006-06-13

Kimball, Ben, et al. 2006. Field visit to Loverens Mill Cedar Swamp Preserve on June 13.

Sperduto, D. & N. Ritter. 1994. Altantic White Cedar Wetlands of New Hampshire. Environmental Protection Agency, Boston, MA.

NHB10-0644 EOCODE: ARAAD02020*130*NH

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (Glyptemys insculpta)

Legal Status Conservation Status

Federal: Not listed Global: Apparently secure but with cause for concern

State: SC State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked

Comments on Rank:

Detailed Description: 2008: Area 11603: 1 adult seen.2006: Area 11693: 1 adult seen.2005: Area 12135: 1 adult

seen.2002: Area 12069: 1 observed.

General Area: 2005: Area 12135: Crossing highway towards North Branch of Contoocook River.2002:

Area 12069: Near cedar swamp.

General Comments: Management

Comments:

Location

Survey Site Name: Loverens Mill

Managed By: The Nature Conservancy #2

County: Hillsborough USGS quad(s): Stoddard (4307211)

Town(s): Antrim Lat, Long: Size: 84.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2008: Area 11603: TNC property at Loverens Mill Road.2002: Area 12069: Loverens Mill property

near trail to cedar swamp.

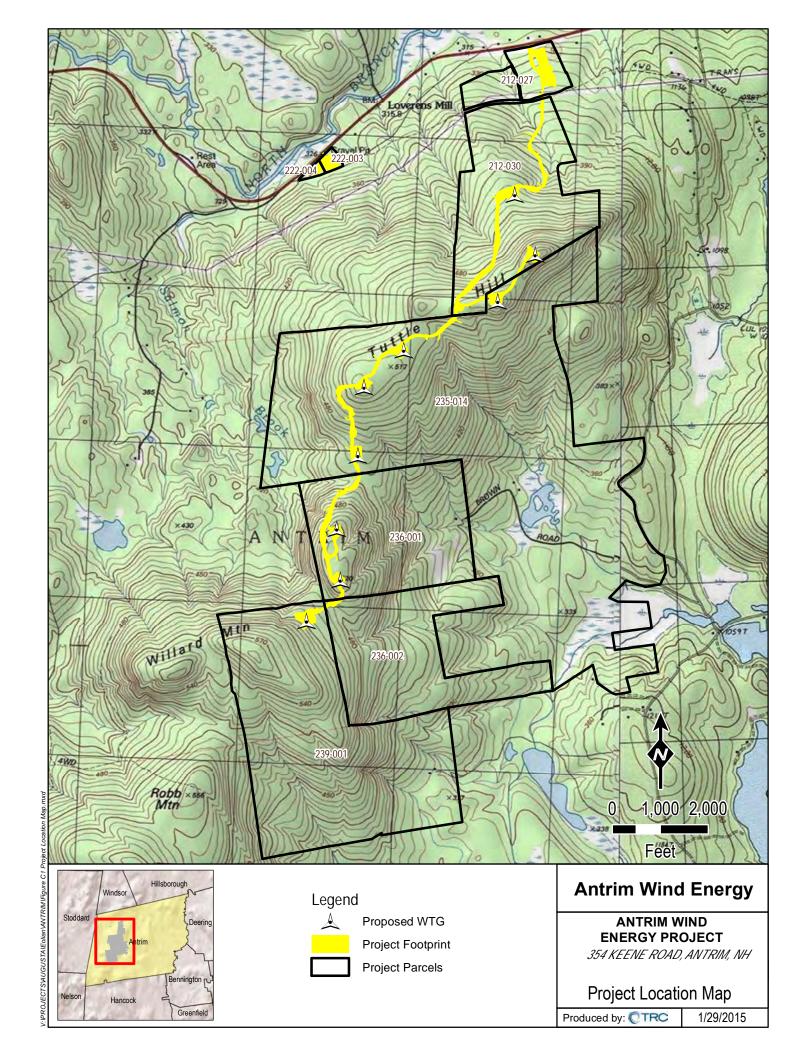
Dates documented

First reported: 2002-07-28 Last reported: 2008-06-01

New Hampshire Wetland Permit Application

EXHIBIT 3

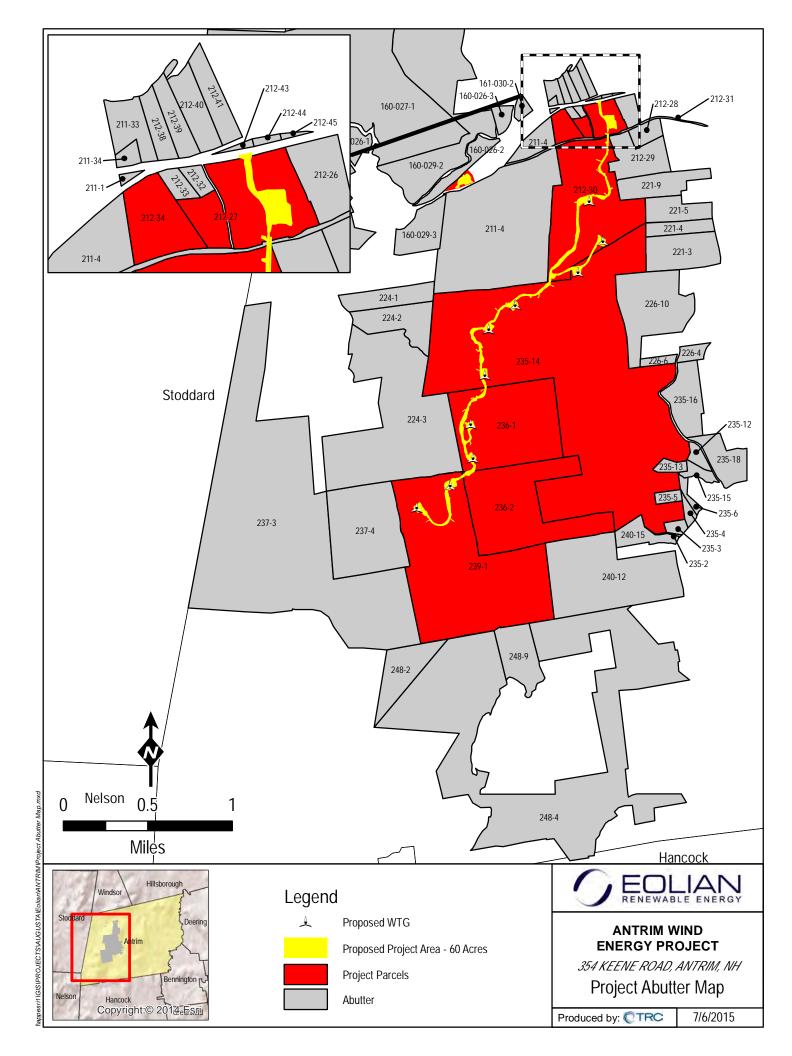
AREA MAP



New Hamp	shire	Wetland	Permit	App	lication

EXHIBIT 4

TAX MAP, ABUTTERS, and ABUTTER NOTIFICATION LETTER



ANTRIM ABUTTERS

Map L	ot Owner	Туре	Property Address	Owner Address	Owner Address
212	27 Ott Michael James	Project Parcel	354 Keene Road	PO Box 160	Antrim NH 03440
212	30 Ott Michael James	Project Parcel	High Range Road	PO Box 160	Antrim NH 03440
212	34 Ott Michael James	Project Parcel	Russell Road	PO Box 160	Antrim NH 03440
222	3 TWBW LLC	Project Parcel	Keene Road	155 Fleet Street	Portsmouth NH 03801
222	4 TWBW LLC	Project Parcel	Keene Road	155 Fleet Street	Portsmouth NH 03801
235	14 Antrim Limited Partnership C/O Heritage Financial Services	Project Parcel	Hattie Brown Road	100 Lowder Brook Drive #1000	Westwood MA 02090
236	1 Cotran Group Inc	Project Parcel	Brimstone Corner Road W/S	685 Massabesic Street	Manchester NH 03101
236	2 Whittemore Paul J Whittemore Helen M	Project Parcel	Brimstone Corner Road	PO Box 528	Auburn NH 03032
239	1 Whittemore Trust Whittemore Arthur F Et Al Ttes	Project Parcel	103 Camp Road - Pvt Road 38	16501 North Elmirage Road 735	Surprise AZ 85374
211	1 Jackson Bradley	Abutter	Keene Road	PO Box 632	Jaffrey NH 03452
211	4 Ellens Pastels & Art House LLC	Abutter	Keene Road	25 North Holt Hill Road	Antrim NH 03440
211	33 Hutchinson Ted Campbell Diana L	Abutter	363 Keene Road	PO Box 469	Henniker NH 03242
211	34 Hutinson Ted & Diana L	Abutter	367 Keene Road	PO Box 469	Henniker NH 03242
212	12 State of New Hampshire Fish & Game Dept	Abutter	409 Keene Road	11 Hazen Drive	Concord NH 03301
212	26 Couterier Marcel J Kusnarowis Paula J	Abutter	344 Keene Road	344 Keene Road	Antrim NH 03440
212	28 Charette Norman M	Abutter	High Range Road	PO Box 74	Westport MA 02790
212	29 Mata Cristian ET UX	Abutter	Old Keene Road	73 Rhododendron Road	Stony Brook NY 11790
212	31 Owner Unknown	Abutter	High Range Road	Unknown	Unknown
212	32 Perry Adam	Abutter	362 Keene Road	PO Box 163	Antrim NH 03440
212	33 Gauthier Raymond C and Scott H	Abutter	Keene Road	York River Trust 6 Manhattan Drive	Amherst NH 03031
212	38 Wells Fargo	Abutter	359 Keene Road	800 Walnut Street	Des Moines IA 50309
212	39 Moote Wayne A	Abutter	355 Keene Road	12 Bobolink Lane	Hillsboro NH 03244
212	40 Barry Robert W	Abutter	351 Keene Road	351 Keene Road	Antrim NH 03440
212	41 Olsen Family Partnership IV Ltd	Abutter	Keene Road	PO Box 2050	Lecanto FL 34460
212	43 Frosch Real Estate Investments LLC	Abutter	349 Keene Road	176 Old Hancock Road	Antrim NH 03440
212	44 Voydatch Steven & Mahala	Abutter	345 Keene Road	55 Jewett Road	Dunbarton NH 03045
212	45 Ellinwood Christie & Albertin	Abutter	Keene Road	PO Box 127	Antrim NH 03440
221	3 Ivey III Rev Trust Jefferson F S ttee	Abutter	20 Reed Carr Road	36 Country Club Lane	Middleton MA 01949
221	4 Garrett C Spencer & Joann H	Abutter	38 Reed Carr Road	38 Reed Carr Road	Antrim NH 03440
221	9 Berwick Bruce E & Barbara I	Abutter	72 Reed Carr Road	72 Reed Carr Road	Antrim NH 03440
222	2 Tuttle Mountain Leasing LLC	Abutter	408 Keene Road	PO Box 519	Antrim NH 03440
222	5 Meadowsend Timberlands Limited Partnership	Abutter	Keene Road	PO Box 966	New London NH 03257
224	1 Schaefer Mark J	Abutter	128 Salmon Brook Road	128 Salmon Brook Road	Antrim NH 03440
224	2 Longgood Janice	Abutter	156 Salmon Brook Road	156 Salmon Brook Road	Antrim NH 03440
224	3 Micheli Lyle J 2008 Trust Micheli Lyle J & Anne J Ttes	Abutter	Salmon Brook Road	319 Longwood Avenue	Boston MA 02115
226	4 Levesque Walter T & Joy C	Abutter	Craig Road	12 Backmeadow Road	Nobleboro ME 04555
226	6 Seroczynski Christine & Sigmond	Abutter	Craig Road	67 Indian Trail	Bristol CT 06010
226	10 Craig Jr Clark A	Abutter	224 Craig Road	224 Craig Road	Antrim NH 03440
235	2 Owner Unknown	Abutter	Private Road 70	Unknown	Unknown
235	3 Caughey Family Re Trust Caughey George H & Michelle B Ttes	Abutter	Brimstone Corner Road	1 Entrance Way	Woodside CA 94062
235	4 Robinson Daniel C & Steven E Robinson Charles E & Gary M	Abutter	Brimstone Corner Road	NE 132nd Circle	Brush Prairie WA 98606
235	5 Robinson Daniel C & Steven E Robinson Charles E & Gary M	Abutter	Brimstone Corner Road	NE 132nd Circle	Brush Prairie WA 98606
235	6 Taylor Glenn P	Abutter	19 Brimstone Corner Road	19 Brimstone Corner Road	Antrim NH 03440
235	12 State of New Hampshire 13 Town of Antrim	Abutter Abutter	Craig Road	State of New Hampshire	Concord NH 03301 Antrim NH 03440
235 235	13 Town of Antrim 15 Town of Antrim	Abutter	Craig Road	PO Box 517 PO Box 517	Antrim NH 03440 Antrim NH 03440
235	16 Craig Steven M & James P	Abutter	Craig Road Craig Road	224 Craig Road	Antrim NH 03440 Antrim NH 03440
235	3 Meadowsend Timberlands Limited Partnership	Abutter	Area Willard Mountain	PO Box 966	New London NH 03257
237	3 Integration Timberianus Limited Partnership	Abutter	AI CA WIIIAI U IVIUUIILAIII	FO BOX 300	New LUNDUN NA 03257

ANTRIM ABUTTERS

237	4 State of New Hampshire Fish & Game Dept	Abutter	West Side of Antrim	11 Hazen Drive	Concord NH 03301
240	12 Harris Center for Conservation Education	Abutter	Brimstone Corner Road	83 Kings Highway	Hancock NH 03449
240	14 Lynch Thomas F & Mary L	Abutter	53 Brimstone Corner Road	53 Brimstone Corner Road	Antrim NH 03440
240	15 Sharby Neil P & Margaret R	Abutter	Brimstone Corner Road	55 Brimstone Corner Road	Antrim NH 03440
248	2 Audubon Society of New Hampshire	Abutter	Willard Pond	3 Silk Farm Road	Concord NH 03301
248	4 Audubon Society of New Hampshire	Abutter	Willard Pond Road	3 Silk Farm Road	Concord NH 03301
248	9 Audubon Society of New Hampshire	Abutter	Willard Pond Road	3 Silk Farm Road	Concord NH 03301

ABUTTER NOTIFICATION OF WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

RE:

Wetlands Permit Application

Antrim Wind Energy LLC

155 Fleet Street

Portsmouth, NH 03801

Tax Map/Lot#: 212/027, 212/030, 212/034, 236/001, 235/014, 236/002, 239/001,

222/003, 222/004

Dear Sir or Madam:

This letter is to inform you that a permit application will be filed with the NH Department of Environmental Services for a wetlands permit associated with the above referenced project. Under state law RSA 482-A:3 I (d)(1), I am required to notify you about the application, which proposes work abutting your property.

Once it if filed, the permit application, including the plans that show the proposed project, will be available for viewing at the City or Town Clerk's office in the town where the proposed project is located.

Sincerely,

Q

John B. Kenworthy Executive Officer

Antrim Wind Energy LLC

155 Fleet Street

Portsmouth, NH 03801

(603) 570-4842

EXHIBIT 5 WETLANDS REPORT

WETLAND DELINEATION REPORT

For Antrim Wind Energy Project Town of Antrim Hillsborough County, New Hampshire

Prepared for:

Antrim Wind Energy, LLC 155 Fleet Street Portsmouth, NH 03801



Prepared by:

TRC ENVIRONMENTAL CORPORATION

10 Maxwell Drive, Suite 200 Clifton Park, New York 12065

> January 2012 Revised 2015

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Attach	ment B Professional Resume

1.0 INTRODUCTION

Antrim Wind Energy LLC (AWE) is proposing to construct the Antrim Wind Energy Project (Project) on Tuttle Hill and Willard Mountain in the Town of Antrim, Hillsborough Country, New Hampshire. The proposed Project is sited entirely on privately owned land that is leased by AWE. The proposed Antrim Wind Energy Project involves the construction of wind turbines, an electrical collection system and interconnection substation, new access road, and an operations and maintenance building. There will be no new electrical transmission lines, other than collector system lines, constructed as part of this Project. The total direct impact for the access roads, the turbine pads, and electrical collector system will be approximately 57.1 acres.

The proposed project is sited on the ridges of Tuttle Hill and Willard Mountain which are oriented east-northeast to west-southwest. The ridges are approximately parallel to NH Route 9, which is about ¾ of a mile to the north. Between the ridgeline and Route 9 is an existing transmission corridor containing both an 115kV transmission line and a 34.5kV distribution circuit; the proposed Project will interconnect with the existing 115kV line. See Attachment A, Figure 1, for a map of the Project area and Project elements.

TRC Environmental Corporation (TRC) was retained by AWE to identify and delineate jurisdictional wetlands and waterways within the project area to support the design, or layout, of the proposed facilities. TRC has prepared this wetland delineation report on behalf of AWE to support the submittal of a Joint Application for a Permit (a U.S. Army Corps of Engineers (ACOE) and New Hampshire State wetlands permit).

2.0 CURRENT AND HISTORIC LAND USES

2.1 Current Land Use

Most of the Town of Antrim is undeveloped, and a large proportion of the town's landscape is heavily wooded. Much of Antrim's forested areas are located in the Rural and Rural Conservation Zoning Districts of town; these two districts constitute over 70% of Antrim's total area. These woodlands are viewed by the town as a renewable resource and are logged on a regular basis. In addition to abundant woodland, there are also numerous conservation areas, hiking trails and water features (Town of Antrim 2011).

2.2 Historic Land Use

Historically, the area of the proposed Project was cleared for sheep farming; numerous stone walls still remain as a result of this historic activity. After the decline of sheep farming, the site was allowed to regenerate into a forested condition. Subsequently, timber harvesting has occurred in many areas on Tuttle Hill and Willard Mountain. Currently, the land in and around the area of proposed development consists of undeveloped forest land in various stages of maturity, ranging from recent clear cuts and early successional stands as a result of timber harvesting, to mature forested areas.

3.0 WETLAND DELINEATION METHODOLOGY

3.1 Siting Alternatives

The layout of wind turbines is a function of several siting factors that balance the location of each wind turbine and environmental compatibility. These factors include:

- maximizing wind speed;
- minimizing tree clearing, wetland impacts, and the acquisition of land (the Project proposes to lease the land needed for the Project facilities);
- maintaining the current use of the land;
- connecting the turbines with an efficient and practical network of unpaved access roads for construction and maintenance of the turbines:
- co-locating electric cables with the access road corridor that connect the turbines to electric substation; and
- co-locating the electric transmission line that would connect the Project to the electric grid within existing infrastructure right-of-way.

These siting factors inherently create the need for a Project survey area that was sufficiently large enough to provide for an adequate area to identify cultural and natural resources and allow for the opportunity to evaluate siting alternatives that avoid and minimize impacts to any identified resources. After reviewing available topographic, soils mapping, and potential turbine locations for the Project area, TRC developed a survey area, which is depicted on Figure 1, found in Attachment A. With a survey corridor of 500 feet in width with a 250 foot radius around potential turbine locations, the survey area was approximately 462 acres.

To determine the potential for wetland impacts from construction of the Antrim Wind Energy Project, TRC assessed the survey area for the presence of federal and jurisdictional wetlands. A New Hampshire Certified Wetland Scientist from TRC conducted wetland delineations in August, September, November 2011, and October 2014 (refer to Attachment B for professional resume and qualifications). TRC also investigated hydrologic connectivity (drainage ditches, natural swales, intermittent and perennial streams outside the study corridor when necessary to verify "normal conditions" or "nexus" hydrologic determinations. The delineations were performed in accordance with the U.S. Army Corps of Engineers (USACE) wetland delineation criteria and methodology which is described in Section 3.2. The USACE data sheets have been compiled for this Wetland Delineation Report and presented in Attachment C.

This report presents the delineation methodology, wetland identification, and the results of the field wetland delineation, including descriptions of on-site hydrology, soils and vegetation (see Section 4.0). Mapping is provided in Attachment A, with Figure 2 presenting the wetland mapping.

3.2 Wetland Delineation Method

TRC wetland delineation crews surveyed proposed corridors using the Federal Routine Determination Method presented in the USACE Wetlands Delineation Manual (USACOE 1987), including clarifications and interpretations provided in the March 6, 1992 guidance memorandum (Williams 1992), USACOE and Environmental Protection Agency guidance on jurisdictional forms (USACOE 2007), and the Regional Supplements to Corps Delineation Manual (USACOE 2009).

The 1987 USACE manual and guidance memorandums emphasize a three-parameter approach to wetland boundary determination in the field. This approach involves the identification of: (i) evidence of wetland hydrology; (ii) presence of hydric soils; and (iii) predominance of hydrophytic vegetation as defined by the National Plant List Panel (Reed 1988). Positive indicators of all three parameters are normally present in wetlands and serve to distinguish between both upland and transitional plant communities. Identified wetlands were classified according to Cowardin et al. (1979).

After a wetland area was initially identified, an appropriate transect and plot location was established, generally perpendicular to the wetland/upland boundary, in order to document conditions within each plant community and firmly establish the wetland boundary using wetland indicators. USACE Wetland Determination data forms were completed for each representative wetland transect. These data forms are provided in Attachment C to this report. The wetland boundary was marked with sequentially numbered (alpha-numeric) pink flagging labeled with "Wetland Delineation". Once wetland flags were in place, the location of each flag was pinpointed using a hand-held Global Positioning Satellite (GPS) unit. These data were downloaded into a GIS system and then plotted on the project base map (a USGS geo-referenced map), which is provided in Attachment A, Figure 2. The results of the delineations are summarized in Section 4.0.

4.0 WETLAND DELINEATION RESULTS

A total of thirty eight (38) wetland areas were identified in the Project survey area. This report describes and maps those wetlands within and in relative proximity to the proposed roads, turbines, collector system, the proposed transmission right-of-way corridor, and other facility sites associated with the Project (see Figure 2 in Attachment A). The 38 wetlands are represented in Table 4.1 due to their occurrence in the proposed corridor and in close proximity to the proposed project corridors or facility sites. Of the 38 wetlands, twenty-four (24) are deciduous broad-leaf forested wetlands, three (3) are conifer dominated forested wetland, two (2) are mixed forested and scrub-shrub wetland, and five (5) are scrub-shrub wetlands. Three (3) of the delineated wetlands within the Project corridor consist of two or more wetland types, including three (3) streams with associated palustrine wetlands (2 intermittent and 1 perennial stream). The wetland associated with the perennial water-way consists of a mixed palustrine system. Table 4-1 provides a summary of the wetlands identified along the Project corridor, including their classification in accordance with Cowardin et al (1979).

Narrative descriptions of wetland hydrology, soils and vegetation observed within the Project study area are presented in the following sections. Tables 4-1, 4-2 and 4-3 summarize the wetlands delineated in this report, streams identified, and the soil series information we assembled for the Project area respectively.

4.1 Vegetation

Within the Project area, vegetative communities consist of forested upland and wetland communities. Forest stands include mostly mixed coniferous and deciduous forest, with a small portion of the Project area sustained as a managed transmission line ROW and another portion recently timber harvested on Willard Mountain.

The wetland communities crossed by the Project include and scrub-shrub wetlands typically found in the transmission line ROW and isolated forested wetlands. The scrub-shrub wetlands typically contain sapling red maple (*Acer rubrum*), maleberry (*Lyonia lingustrina*), red osier dogwood (*Cornus stolonifera*), arrowwood (*Viburnum dentatum*), meadowsweet (*Spiraea latifolia*), and steeplebush (*Spiraea tomentosa*). The forested wetlands typically contain red maple, yellow birch (*Betula alleghaniensis*), and green ash (*Fraxinus pennsylvanica*).

Upland tree species found throughout the Project area include red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), white pine (*Pinus strobus*), red spruce (*Picea rubens*), balsam fir (*Abies balsama*), quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), eastern hemlock (*Tsuga canadensis*) and others. Upland herbaceous species include wild sarsassparilla (*Aralia nudicaulis*), New York fern (*Thelypteris noveboracensis*), Solomon's-seal (*Polygonatum pubescens*), star flower (*Trientalis borealis*), hayscented fern (*Dennstaedtia punctilobula*) and Canada mayflower (*Maianthemum canadense*).

4.2 Hydrology

Streams within the Project area include an unnamed perennial and intermittent streams draining both to the north (Route 9) toward the North Branch River and to the southeast draining into Gregg Lake. Because the Project area is along a ridgeline and moderately well drained, we

observed very few perennial streams. Observations in the field generally suggest that rainfall and snow melt in the spring quickly run off the ridge to lower elevations, without collecting volumes that fill natural depressions or create natural ponds. Small forest wetland areas occur along skidder trails, confined pockets in the regional bedrock, saddle areas along the ridgeline, and in other areas of poorly drained soils that support wetland vegetation.

4.3 Soils

TRC reviewed the published soil survey of the Project area and conducted soil profile characterizations in the study corridor to confirm the presence of hydric soil indictors. Within the Project survey area, a total of 7 different soil types have been mapped by the Natural Resource Conservation Service (formerly the Soil Conservation Service) (USDA & NRCS 2009). Table 4-3 summarizes the soil series in the project area and indicates that most of the Project area soils are mapped with a slope of 3-35 percent. The soil type mapping has also been overlain on the Project location map (see Figure 3 in Attachment A). The mapped soil types range from excessively drained to well drained soils. Field surveys have resulted in delineating additional soil types that are poorly drained to very poorly drained soils and are hydric or wetland soils. Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil.

The wetlands flagged in the Project corridors generally exhibited the soil characteristics of a dark surface horizon (A horizon) overlying grayish (10YR 5/1) to grayish brown (10YR 4/1), sandy loam subsoils with common redoximorphic features. As described below, this is typical of the loamy till parent material sediments in which many of the soils in the region are formed. The upland soils within the forested uplands lacked a low chroma matrix and had typical matrix chromas ranging between 3 and 6. In wetlands, the hydric soil showed evidence of a seasonal high water table in the form of low chroma matrix and redoximorphic features, indicating that the soils experience anaerobic conditions from prolonged saturation thereby meeting the definition of a hydric soil in some instances. The upland and more transitional area soils have developed redoximorphic features common to somewhat poorly to moderately well drained soils but did not exhibit the required low chroma matrix and as a result were not classified as hydric soils. In addition, as a result of glacial till environment, the subsoil (B) and substratum (C) horizons of both hydric and non-hydric soils commonly contain layers of loose stony material on steeper slopes with loamy materials, which are not necessarily indicative of an aquic moisture regime or reducing conditions.

Table 4-1 Summary of Wetlands within Project Area						
Figure 2 8.5" x 11" Sheet Number	Wetland Wetland Types and Associations		Associated Wetland Impact	Cowardin Classification		
4	AN1	Isolated forested wetland. Contains VP1	No direct impact	PFO1		
4	AN2	Isolated forested wetland. Bat radar within wetland	0.005 acre/228 sq. ft. Access road.	PFO4		
4	AN3	Isolated forested wetland	No direct impact	PFO1		
4	AN4	Isolated forested wetland. Contains VP2	No direct impact	PFO1		
4	AN5	Isolated forested wetland. Contains VP3	No direct impact	PFO1		
4	AN6	Isolated forested wetland	No direct impact	PFO1		
3	AN7	Isolated forested wetland straddling property line	No direct impact	PFO1		
3, 4	AN8	Forested wetland draining southeast associated with intermittent stream AN9	0.001 acre/34 sq. ft. Access road.	PFO4		
3	AN10	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1, 3	AN11	Isolated forested wetland with ephemeral inlet and outlet	No direct impact	PFO1		
1	AN12	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1, 3	AN13	Isolated forested wetland along ATV trail	No direct impact	PFO1		

Table 4-1 Summary of Wetlands within Project Area						
Figure 2 8.5" x 11" Sheet Number	Wetland ID	Wetland Types and Associations	Associated Wetland Impact	Cowardin Classification		
1, 3	AN14	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1	AN15	Isolated forested wetland within skidder trail	No direct impact	PFO1		
1	AN16	Very small isolated wetland along old skidder trail	No direct impact	PFO1		
1	AN18	6 forested wetland areas draining north associated with perennial stream AN17	No direct impact	PFO1/4 & PSS1		
1	AN20	Isolated scrub-shrub wetland within transmission ROW	No direct impact	PSS1		
1	AN21	Isolated scrub-shrub wetland within transmission ROW	No direct impact	PSS1		
1	AN22	Isolated forested wetland within skidder trail	0.004 acre/170 sq. ft. Access road.	PFO1		
1	AN23	Isolated forested wetland within skidder trail	No direct impact	PFO1		
4	AN24	Isolated forested wetland. Associated with VP 5. ATV trail within wetland.	No direct impact	PFO1		
4	AN25	Isolated forested wetland. Associated with VP 4.	No direct impact	PFO4		
5	AN26	Forested wetland draining to the northwest along property line	No direct impact	PFO1		
5	AN27	Forested wetland draining to the southeast. Associated with intermittent stream AN28.	0.028 acre/ 1,218 sq. ft. Access Road	PFO1		

Figure 2 8.5" x 11" Sheet Number	Wetland ID AN30	Wetland Types and Associations Isolated forested	Associated Wetland Impact	Cowardin
1	AN30		1	Classification
		wetland with ephemeral inlet and outlet	0.02 acre/869 sq. ft. Substation	PFO1
1	AN31	Isolated scrub-shrub wetland within transmission ROW	0.016 acre/708 sq. ft. Transmission tap structure and guys	PSS1
1	AN32	Isolated scrub-shrub wetland within transmission ROW	0.032 acre/1,392 sq. ft. Access Road	PSS1
1	AN33	Isolated forested wetland within skidder trail	ted forested land within No direct impact	
1	AN35	Isolated forested an scrub-shrub wetland located in ROW and to the North of the ROW	No direct impact	PFO1/PSS1
4	AN36	Isolated forested wetland with peat soils	No direct impact	PFO1
4	AN37	Isolated forested wetland adjacent to ATV trail	No direct impact	PFO1
4	AN38	Isolated forested wetland with potential vernal pool	No direct impact	PFO1
5	AN41	Isolated forested wetland.	0.06 acre/2,584 sq. ft. Turbine 9.	PFO1
4	AN1000	Isolated forested wetland	0.022 acre/963 sq. ft. Turbine 4.	PFO1
2	AN-LD 1	Isolated forested wetland.	No direct impact	PFO1
2	AN-LD 2	Isolated forested and scrub-shrub wetland. No direct impact		PFO/PSS1
2	AN-LD 3	Isolated forested wetland No direct impact		PFO1
2 TOTAL IMPACT	AN-LD 4	Isolated scrub-shrub wetland. Formerly borrow pit area. 0.02 acre/955 sq. ft. Temporary staging area. 0.21 acre/9,121 sq. ft.		PSS1

4.4 Wetland Descriptions

The following narratives briefly characterize the delineated wetlands summarized in Table 4-1. Refer to Figure 2 for the location of these wetlands within the project study area and landscape in

Attachment A.

<u>Wetland ANI</u> is a deciduous mixed forest wetland dominated by red maple (*Acer rubrum*), and black spruce (*Picea mariana*). It is located within a pocket of ledge along the ridgeline of Tuttle Hill. This wetland also contains Vernal Pool 1.

<u>Wetland AN2</u> is a deciduous mixed forest wetland dominated by yellow birch (*Betula alleghaniensis*) and black spruce. It is located within a pocket of ledge along the ridgeline of Tuttle Hill.

<u>Wetlands AN3, AN4 and AN5</u> are deciduous forested wetlands dominated by red maple. They are located within pockets of ledge along the ridgeline of Tuttle Hill. Wetland AN4 contains Vernal Pool 2, and wetland AN5 contains Vernal Pool 3.

<u>Wetland AN6</u> is a deciduous forest wetland dominated by red maple. It is located within a pocket of ledge along the ridgeline between Tuttle Hill and Willard Mountain.

<u>Wetland AN7</u> is a very small deciduous forest wetland dominated by red maple. It is located along a stone wall within a pocket of ledge along the ridgeline between Tuttle Hill and Willard Mountain.

<u>Wetland AN8</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a swale draining from Wetland AN7 towards the southeast. An intermittent stream segment (Stream AN9) is located within this wetland. The stream flows between very large boulders; eventually the hydrology disappears as the slope increases along the southeast boundary of the wetland.

<u>Wetlands AN10, AN11 and AN12</u> are deciduous forest wetlands dominated by yellow birch and green ash (*Fraxinus pennsylvanica*). They are located in hillside seeps created by skidder activity.

<u>Wetland AN13</u> is a deciduous forest wetland dominated by red maple. It is located within a hillside seep created by skidder activity. An ATV access trail traverses the northwestern portion of this wetland.

<u>Wetlands AN14 and AN15</u> are deciduous forest wetlands dominated by yellow birch and green ash. They are located in hillside seeps created by skidder activity.

<u>Wetland AN16</u> is a very small deciduous forest wetland dominated by red maple. It is located within an old skidder trail to the north of the transmission ROW.

<u>Wetland AN18</u> is a wetland complex associated with perennial stream AN17. Six components of this wetland complex were individually identified as wetlands AN18a, b, c, d, e and f. Component AN18a is an area of scrub shrub within the existing transmission corridor; it is dominated by red osier dogwood (*Cornus stolonifera*), green ash, and black willow (*Salix nigra*). Wetlands AN18 b, c, d, e and f are deciduous mixed forested wetlands dominated by green ash, yellow birch, and red maple. Each of these wetlands has been impacted by logging activity.

<u>Wetlands AN20 and AN21</u> are deciduous scrub shrub wetlands dominated by red maple, meadowsweet (*Spiraea latifolia*), and steeplebush (*Spiraea tomentosa*). They are located within the existing transmission corridor.

<u>Wetlands AN22 and AN23</u> are deciduous forest wetlands dominated by red maple, yellow birch and green ash. They are located in hillside seeps created by skidder activity.

<u>Wetland AN24</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. An ATV trail traverses the through the middle of this wetland, from north to south. This wetland also contains Vernal Pool 5.

<u>Wetland AN25</u> is an evergreen mixed forest wetland dominated by eastern hemlock (*Tsuga canadensis*) and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. This wetland contains Vernal Pool 4.

<u>Wetland AN26</u> is a deciduous forest wetland dominated by red maple and yellow birch. It is located within a depression on the ridgeline between Tuttle Hill and Willard Mountain. This wetland drains to the northwest.

<u>Wetland AN27</u> is a deciduous mixed forest wetland dominated by red maple, yellow birch, and black spruce. It is located within the saddle area at the northern base of Willard Mountain. The wetland drains to the southeast and feeds Intermittent Stream AN28 which drains to the southeast.

<u>Wetland AN30</u> is a very small deciduous forest wetland dominated by red maple. It receives ephemeral flow from wetland AN31 which is located upslope (and within the existing transmission corridor). This wetland has an ephemeral drainage that flows towards intermittent stream AN29 to the north.

<u>Wetlands AN31 and AN32</u> are deciduous scrub shrub wetlands dominated by red maple, meadowsweet and maleberry (*Lyonia lingustrina*). They are located within the existing transmission corridor. Wetland AN31 ephemerally drains to the north into Wetland AN30.

<u>Wetland AN33</u> is a very small deciduous forest wetland dominated by red maple. It is located within a hillside seep created by skidder activity.

<u>Wetland AN35</u> is primarily a forested wetland dominated by red maple, but includes an area of scrub shrub. The scrub shrub component is located within the existing transmission corridor, on the southern portion of the wetland, and is dominated by winterberry (*Ilex verticillata*).

<u>Wetland AN36</u> is an isolated forested wetland dominated by red maple. This wetland contains organic soils. It is located in a saddle area and is near an ATV trail.

<u>Wetland AN37</u> is a small isolated deciduous forest wetland dominated by red maple. It has an ephemeral drainage that flows west across an ATV trail that is adjacent to the wetland.

<u>Wetland AN38</u> is an isolated deciduous forest wetland dominated by red maple, with a thick understory of winterberry shrubs. It has an ephemeral drainage that flows northwest through a steep boulder area. This wetland contains an area which has been identified as a potential vernal pool.

<u>Wetland AN41</u> is an isolated deciduous forest wetland dominated by red maple with a sparse understory of red maple and yellow birch saplings and a dense herbaceous layer dominated by cinnamon fern. This wetland is located at the base of a long bouldery slope.

<u>Wetland AN1000</u> is an isolated deciduous forest wetland dominated by red maple with an understory of winterberry shrubs and a patchy herbaceous layer of cinnamon fern and three-seeded sedge. This wetland is located in a concave area that drains to the east, and the soils are saturated to within 10-inches of the surface.

<u>Wetland AN-LD 1</u> is a deciduous forest wetland dominated by red maple (*Acer rubrum*). It is located within a depression on a terrace located above the North Branch River valley. Soils are saturated and are sandy with a cemented restrictive layer.

<u>Wetland AN-LD 2</u> is a deciduous forest wetland dominated by red maple with a lesser component of highbush blueberry and meadowsweet. It is located in a flat area on a terrace above the North Branch River valley. An old borrow pit is directly adjacent to the wetland boundary. Soils are saturated and are sandy.

<u>Wetland AN-LD 3</u> is deciduous forested wetland dominated by red maple. It is located within a depression on a terrace located above the North Branch River valley. Soils are saturated and are sandy. An intermittent stream channel (AN-LD-INT 1) carries surface water and disperses in this wetland area.

<u>Wetland AN-LD 4</u> is a deciduous scrub-shrub wetland dominated by speckled alder. It is located within an old borrow pit excavation on a terrace above the North Branch River valley. Soils are sandy, saturated and surface water was present at the time of survey.

4.5 Waterbody Descriptions

The following narratives briefly characterize the identified perennial and intermittent watercourses summarized in Table 4-2. Refer to Figure 2 in Attachment A for the location of these watercourses within the project study area.

Table 4-2 Summary of Streams within Project Area							
Figure 2 8.5" x 11" Sheet Number	Stream ID	Flow Regime	Associated Impact	Associated Wetland(s)			
2	AN9 Inter		No direct impact	AN8			
1	AN17	Perennial	74 linear feet, 4 foot wide channel	AN18a,b,c,d,e,f			
1	AN19	Intermittent	No direct impact	Tributary to AN17			
4	AN28	Intermittent	No direct impact	AN27			

4	AN28a	Intermittent	No direct impact	
1	AN29	Intermittent	156 linear feet, 1	
1	AIN29	Intermittent	foot wide channel	
1	AN34	Intermittent	No direct impact	Flows into AN17
2	AN40	Intermittent	No direct impact	
2	AN-LD-INT 1	Intermittent	No direct impact	AN_LD 3
TOTAL IMPACT			230 linear ft./	
TOTAL IMPACT			452 sq. ft.	

Stream AN9 is an intermittent stream with a sandy substrate. The average width of the stream is 2 feet and the bank height is less than one foot. There was approximately 1 inch of flowing water in the stream at the time of the wetland delineation survey (in late summer, 2011). The stream channel commences within wetland AN8 and disperses within the same wetland due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN17</u> is perennial stream with a gravel/cobble substrate. The average width of the stream is 4 feet and the bank height averages approximately one foot. There was approximately 5 inches of flowing water at the time of the delineation. The stream flows into the survey area from the south and then out to the north, flowing towards Route 9. Intermittent Streams AN19 and AN34 flow into this stream.

<u>Stream AN19</u> is an intermittent stream with a sandy substrate. The average width of the stream is approximately 1 foot and the bank height is less than one foot. There was approximately 1 inch of flowing water at the time of the delineation. The stream channel commences in a forested setting, within a seep on a slope, and flows into Stream AN17.

<u>Stream AN28</u> is an intermittent stream with a gravel/sand substrate. The average width of the stream is approximately 3 feet and the bank height is less than one a foot. There were approximately 4 inches of flowing water at the time of the delineation. The stream channel commences within wetland AN27 and flows to the southeast.

<u>Stream AN28a</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately 2 feet and the bank height averages approximately one foot. There were approximately 2 inches of flowing water at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland as it flows down slope. This dispersal is due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN29</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately one foot, and the bank height is less than one foot. There was no flowing water in the streambed at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland as it flows down slope. This dispersal is due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN34</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is approximately 3 feet and the bank height is less than one foot. There were approximately 4 inches of flowing water at the time of the delineation. The stream channel commences in a forested setting within a seep on a slope and flows into Stream AN17.

<u>Stream AN40</u> is an intermittent stream with a gravel/cobble substrate. The average width of the stream is 2 feet and the bank height averaged around a foot. There were approximately 2 inches of flowing water at the time of the delineation. The stream channel commences within an upland area with steep slopes and disperses within the upland downslope due to slopes and a bouldery landscape, which allows for subsurface flow.

<u>Stream AN-LD-INT 1</u> is an intermittent stream with a sandy substrate that originates in a logging trail upslope and south of the site. The average width of the stream is 1-2 feet and the bank height is less than one foot. The channel was dry at the time of the wetland delineation survey (in July 2012). The stream channel disperses within wetland AN-LD 3.

Table 4-3 Soil Description Summary						
Soil Names	Symbol	% Slopes	Hydric (y/n)	Parent Material	Drainage Class	
Lyman-Tunbridge-Rock outcrop complex	161C	3-15	N	Lyman: Loamy Till Underlain by Schist Bedrock; Tunbridge: Loamy Till Underlain by Granite	Lyman: Somewhat Excessively Drained; Tunbridge: Well Drained	
Lyman-Tunbridge-Rock outcrop complex	161D	15-35	N	Lyman: Loamy Till Underlain by Schist Bedrock; Tunbridge: Loamy Till Underlain by Granite	Lyman: Somewhat Excessively Drained; Tunbridge: Well Drained	
Tunbridge-Lyman- Monadnock complex, stony	160B	3-8	N	Tunbridge: Loamy Till Underlain by Granite; Lyman: Loamy Till Underlain by Schist Bedrock; Monadnock: Loam Underlain by Sandy Till	Tunbridge: Well Drained; Lyman: Somewhat Excessively Drained; Monadnock: Well Drained	
Tunbridge-Lyman- Monadnock complex, stony	160C	8-15	N	Tunbridge: Loamy Till Underlain by Granite; Lyman: Loamy Till Underlain by Schist Bedrock; Monadnock: Loam Underlain by Sandy Till	Tunbridge: Well Drained; Lyman: Somewhat Excessively Drained; Monadnock: Well Drained	
Marlow stony loam	77C	8-15	N	Loamy Till	Well Drained	
Marlow stony loam	77D	15-35	N	Loamy Till	Well Drained	
Rock outcrop	399			Granite	Excessively Drained	
Colton Loamy Sand	22C	8-15	N	Sandy and Gavelly Outwash	Excessively Drained	

4.6 Natural Resource Conservation Service Soil Series Descriptions

The following are the abbreviated descriptions of each of the relevant soil types taken from the USDA (Natural Resource Conservation Service) Official Soil Series Descriptions Online Soils Database and the Soil Survey Geographic Database (SSURGO) for Hillsborough County, New Hampshire, Western Part (USDA & NRCS 2009). Additional information regarding relevant soil characteristics are also summarized in Table 4-3. Soils mapping of the Project area is in Attachment A, Figure 3.

Tunbridge-Lyman-Monadnock complex, stony

Tunbridge Series: These very moderately deep, well drained soils formed in loamy till of Wisconsin age derived mainly from micaceous schist, gneiss, and phyllite. They are on mountain side slopes, mountain tops, mountain ridges, hill tops, and hill slopes. Slope ranges from 0 to 75 percent. The A horizon is typically very friable dark brown sandy loam, with weak fine granular structure. The B horizon is typically reddish brown to yellowish brown silt loams.

It is friable with subangular blocky structure. Bedrock is usually encountered at 28 inches.

Lyman Series: These shallow, somewhat excessively drained soils formed thin mantle of till and frost fractured rock fragments derived principally from gray, greenish gray, or nearly black mica schist rocks with lesser amounts of phyllite, granite, and gneiss. They are found on rocky hills, mountains and high plateaus. Slopes range from 3 to 35 percent. Ap horizons are typically black and 6 inches or more thick. Texture is sandy loam, fine sandy loam, very fine sandy loam, loam or silt loam in the fine-earth fraction. The E horizon generally is a reddish gray fine sandy loam, with very weak fine granular structure. The B horizon generally is a dark red to brown loam, with very weak fine granular structure. Bedrock is usually encountered at a depth of 18 inches.

Monadnock Series: These very deep, well drained soils formed in a loamy mantle underlain by acid, sandy till of Wisconsin age derived mainly from schist, granite, gneiss, and quartzite. They are on upland hills, plains, and mountain sideslopes. Slope ranges from 0-60 percent. The A horizon is typically very friable brown fine sandy loam. The E horizon generally is a light brownish gray sandy loam with a weak fine granular structure. The B horizon generally is reddish to yellowish brown, 5 to 23 inches deep, very friable with a weak fine granular structure. The C horizon consists of gravelly loamy sand extending to a depth of 65 inches.

Lyman-Tunbridge-Rock outcrop complex

Lyman Series: These shallow, somewhat excessively drained soils formed thin mantle of till and frost fractured rock fragments derived principally from gray, greenish gray, or nearly black mica schist rocks with lesser amounts of phyllite, granite, and gneiss. They are found on rocky hills, mountains and high plateaus. Slopes range from 3 to 35 percent. Ap horizons are typically black and 6 inches or more thick. Texture is sandy loam, fine sandy loam, very fine sandy loam, loam or silt loam in the fine-earth fraction. The E horizon generally is a reddish gray fine sandy loam, with very weak fine granular structure. The B horizon generally is a dark red to brown loam, with very weak fine granular structure. Bedrock is usually encountered at a depth of 18 inches.

Tunbridge Series: These very moderately deep, well drained soils formed in loamy till of Wisconsin age derived mainly from micaceous schist, gneiss, and phyllite. They are on mountain side slopes, mountain tops, mountain ridges, hill tops, and hill slopes. Slope ranges from 0 to 75 percent. The A horizon is typically very friable dark brown sandy loam, with weak fine granular structure. The B horizon is typically reddish brown to yellowish brown silt loams. It is friable with subangular blocky structure. Bedrock is usually encountered at 28 inches.

Marlow Series

These well drained soils formed in dense, loamy till derived mainly from mica schist, granite, and phyllite. They are found on drumlins and glaciated uplands. They are moderately deep to a densic contact and very deep to bedrock. Slope ranges from 0 to 60 percent. Typically, the A horizon is a friable very dark gray fine sandy loam with a moderate fine granular structure. Generally, the E horizon is gray fine sandy loam, with very friable consistence. The B horizon consists of a yellowish red to olive fine sandy loam with a weak fine granular structure. The C horizon is an olive gray fine sandy loam with moderate medium platy structure and is very firm.

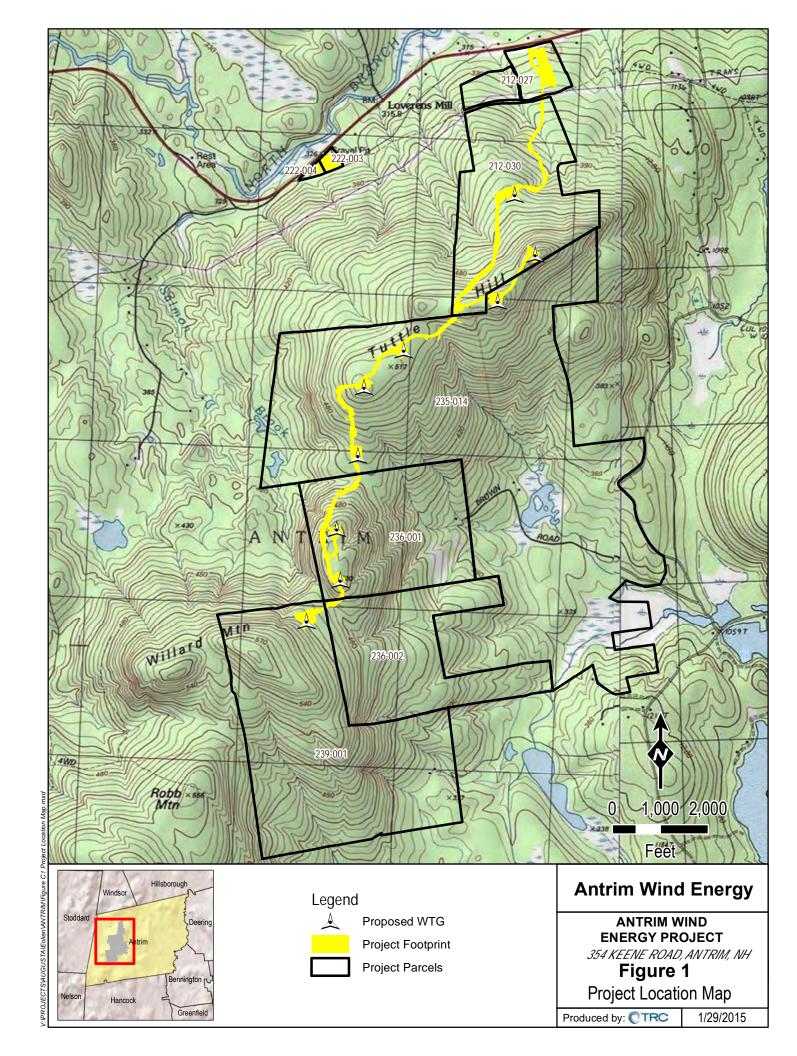
Colton Series

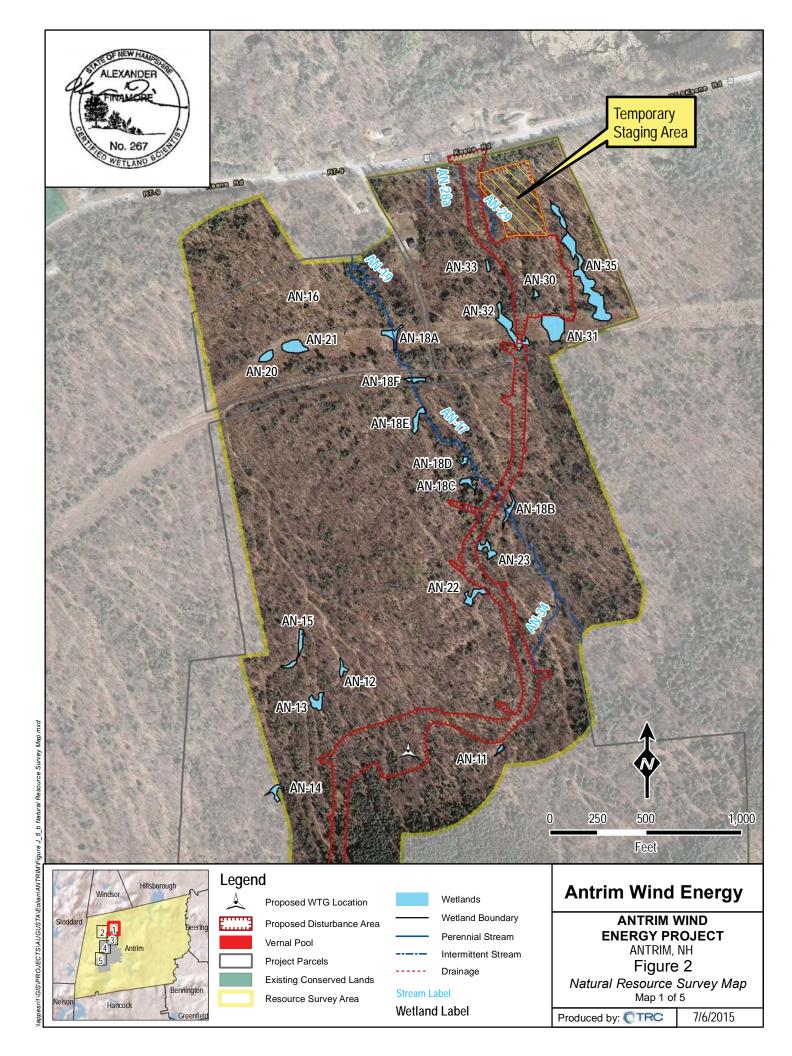
These excessively drained soils formed in sandy and gravelly glacial outwash derived mainly from granite till. They are found on outwash terraces, kames, and eskers. Slope ranges from 0 to 50 percent. The solum ranges from 18 to 36 inches in thickness. The content of rock fragments ranges from 10 to 55 percent in the solum and 35 to 70 percent in the C horizon. Some pedons have an A horizon that is dark reddish brown. The E horizon has gray to dark gray. The A and E horizons range from loamy coarse sand to find sandy loam. The B horizon is dark reddish brown to reddish yellow. It ranges from coarse sand to loamy sand. The C horizon is dark reddish gray to reddish yellow.

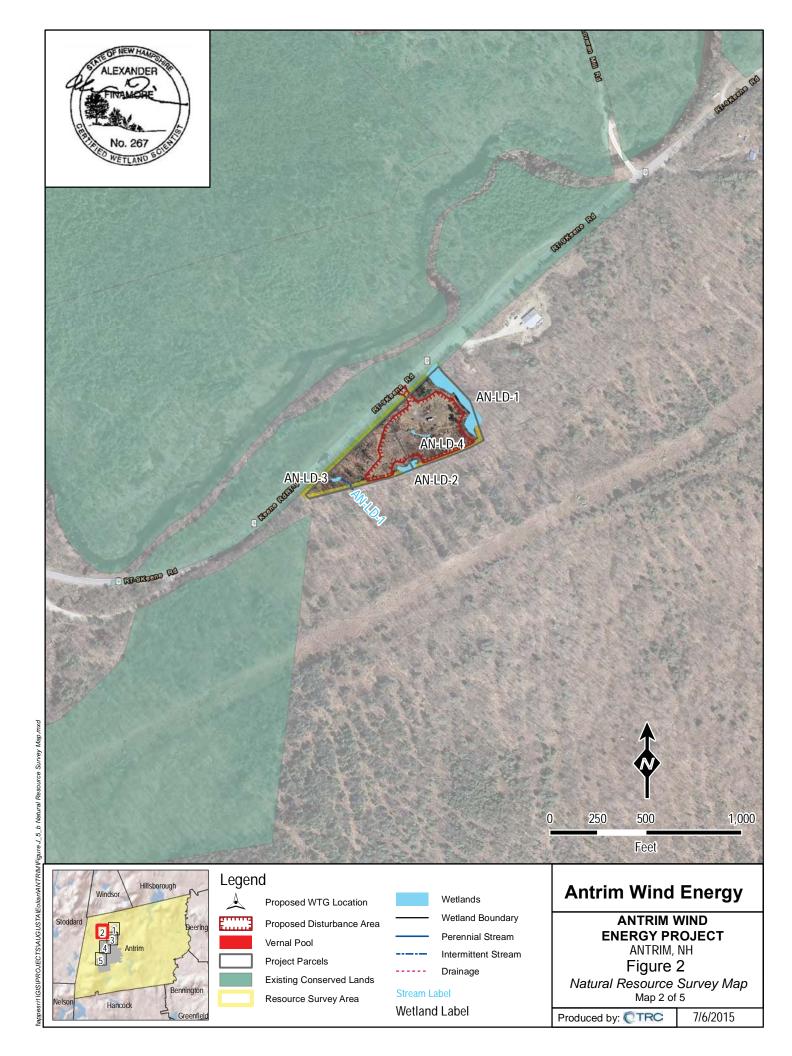
5.0 REFERENCES

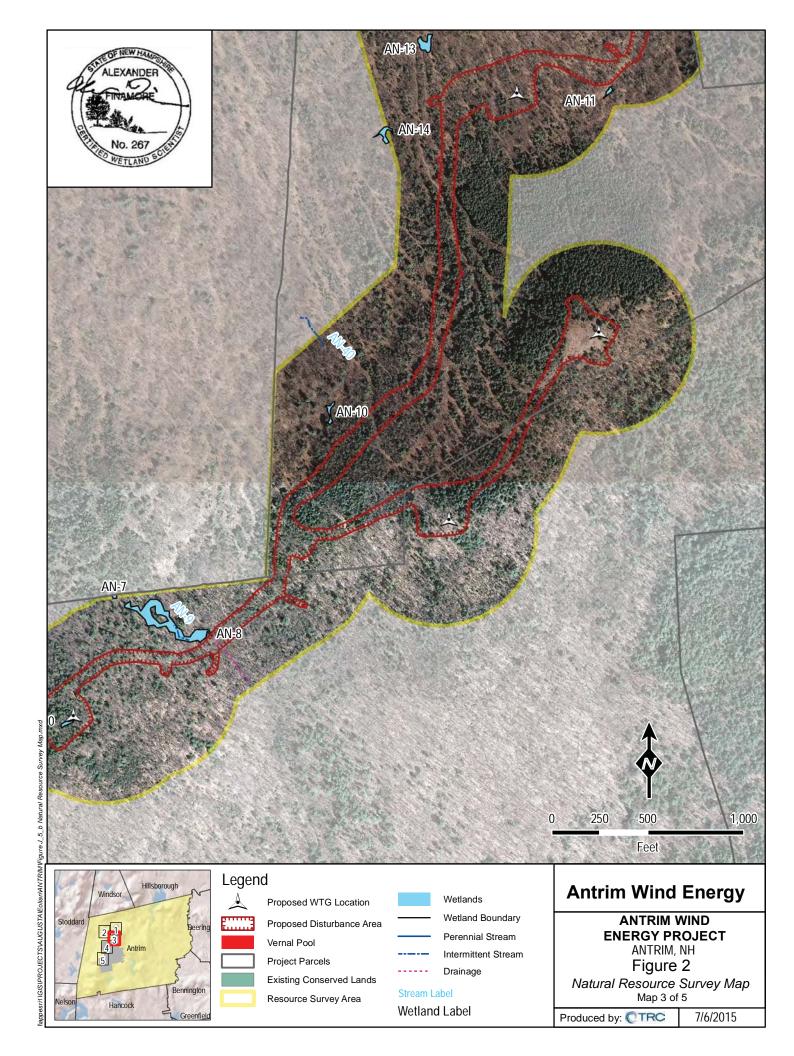
- Cowardin, L.M., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service. 103 pp.
- Natural Resource Conservation Service. 1995. Hydric Soils of the United States, Revised Dec. 15, 1995.
- Reed, P.B. Jr. 1988. National list of plant species that occur in wetlands: national summary. U.S. Fish Wildl. Serv. Biol. Rep. 88(24). 244 pp.
- Town of Antrim. 2011. Zoning Map. Online: http://www.antrimnh.org/Pages/AntrimNH_Planning/Zoning_Map[1].pdf. Site visited December 9, 2011.
- USACOE. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report U-87-1. Waterways Experiment Station, Vicksburg, MS.
- USACOE. 2009. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Online: http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel09-19.pdf. Site visited December 9, 2011.
- USACOE and Environmental Protection Agency. 2007. US Army Corps of Engineers Jurisdictional Form Instructional Guidebook.
- USDA, NRCS. 2009. Soil Survey Geographic Database (SSURGO) for NH602, Hillsborough County, New Hampshire, Western Part. Available for download at: http://soildatamart.nrcs.usda.gov. Site visited January 4, 2012.
- USDA, NRCS. 2011. Soil series classification online database. Online: http://soils.usda.gov/technical/classification/scfile/index.html . Site visited December 9, 2011.
- USDA, NRCS. 2011. Web soil survey. Online: http://websoilsurvey.nrcs.usda.gov/app/. Site visited December 9, 2011.
- Williams, A.E. 1992. Memorandum: Clarification and Interpretation of the 1987 Manual. U.S. Army Corps of Engineers.

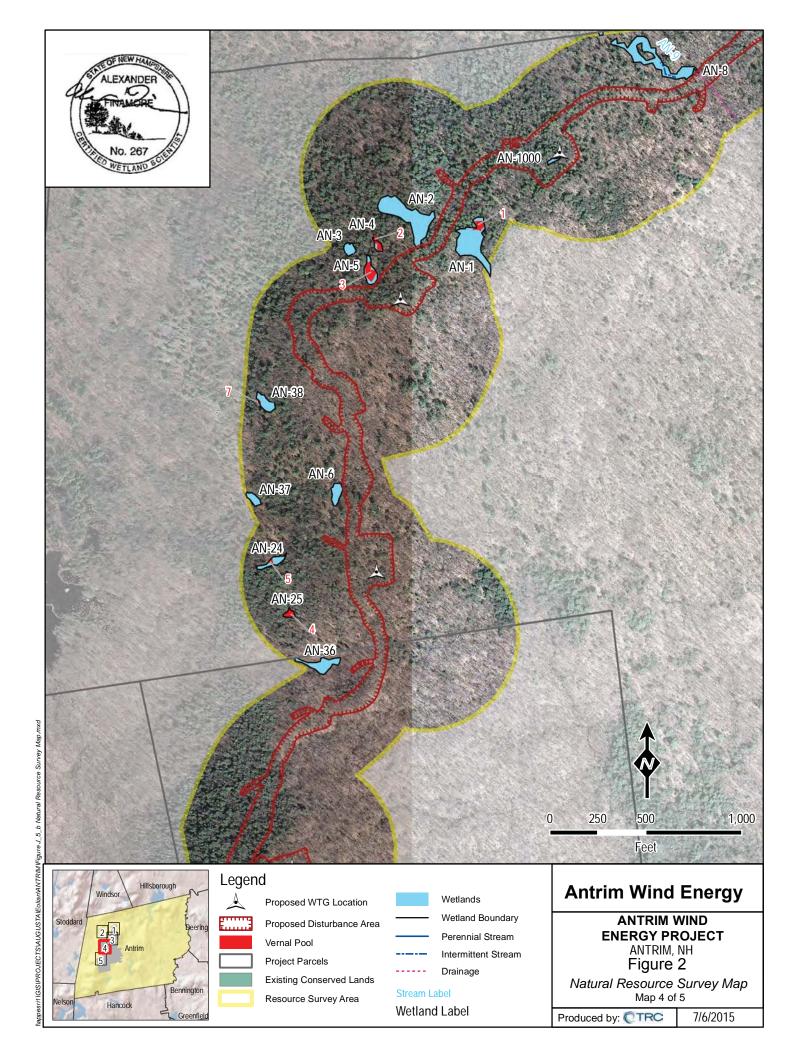
ATTACHMENT A PROJECT MAPPING

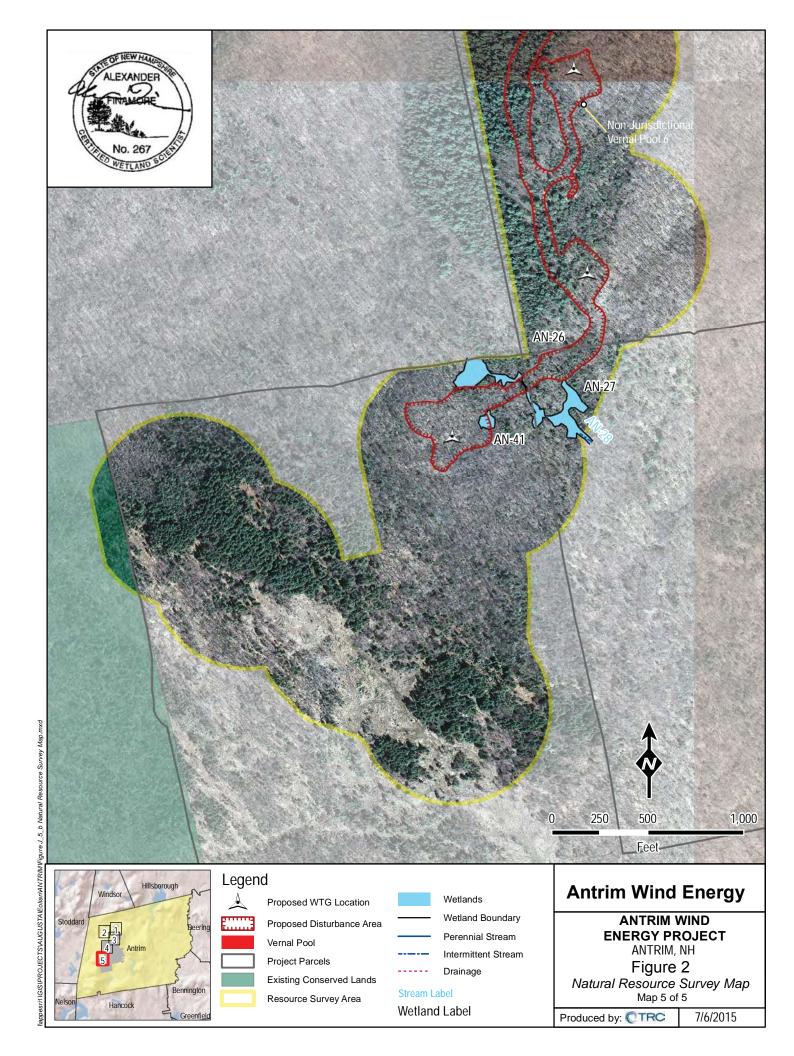


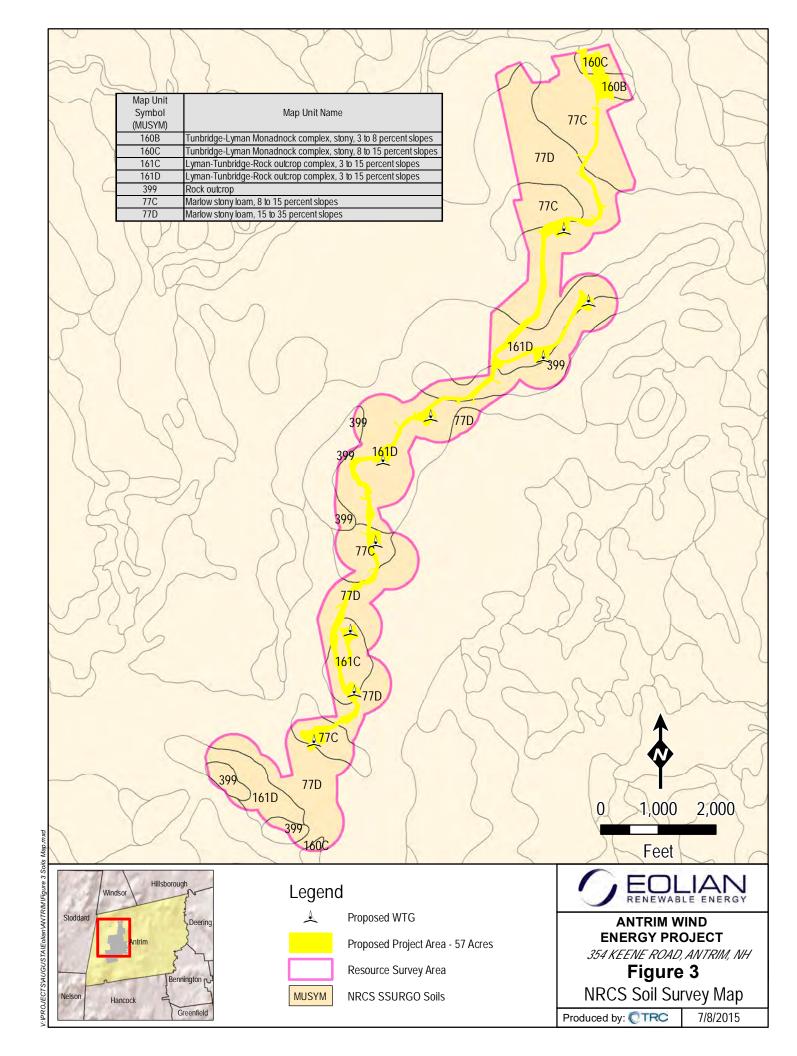












ATTACHMENT B PROFESSIONAL RESUME



ALEXANDER A. FINAMORE

EDUCATION

B.S., Environmental Science and Management, University of Rhode Island, 2004

AREAS OF EXPERTISE

Mr. Finamore has over 7 years experience encompassing

- Federal, State, and Local Environmental Permitting
- Wetland Delineations and Reports
- Subsurface Wastewater Disposal Design
- Vernal Pool Identification and Assessment
- Land Survey
- Preliminary Environmental Site Assessments (PESS)

REPRESENTATIVE EXPERIENCE

Mr. Finamore has completed or managed numerous wetland delineations and vernal pool surveys throughout the northeastern U.S., ranging from single house lots to large linear projects. Mr. Finamore has also completed or managed the permitting process and/or the preparation of technical documents in accordance to State and Federal site location, wetlands, and subsurface wastewater disposal system regulations.

Reunion Energy, Grandpa's Knob Wind Farm, Natural Resource Mapping – VT Wetland Scientist, 2011 Mr. Finamore organized and directed field crews, performed wetland delineations along corridor of proposed 20 wind turbines and collector line, performed vernal pool surveys, attended site walk with client and pertinent state and federal regulators.

Eolian Wind, Antrim Wind Farm, Natural Resource Mapping – NH Wetland Scientist, 2011 Mr. Finamore performed wetland delineations along corridor of proposed 10 wind turbines and collector line, performed vernal pool surveys, attended site walk with client and pertinent state and federal regulators

VELCO, Lines 350 & 370, Natural Resource Mapping – VT Wetland Scientist, 2011 Mr. Finamore organized and directed field crews, performed wetland delineations, wetland function and values assessments, stream classifications, and natural community surveys along existing transmission line right-of-ways

National Grid, 015S, Turtle Sweeps – MA Ecologist, 2011 Mr. Finamore performed Turtle Sweeps for Wood Turtle and Eastern Box Turtle for line restoration work due to tornado damage

National Grid, S9, Natural Resource Mapping – MA Wetland Scientist, 2011 Mr. Finamore performed wetland delineations for reconductoring along the S9 line.

National Grid, Y151, Natural Resource Mapping – MA Wetland Scientist, 2011 Mr. Finamore performed wetland delineations for reconductoring along the A126 line.



Spectra Energy, Wetland Permitting – CT, MA, RI Wetland Scientist, 2011 Mr. Finamore performed local and state wetland permitting for installation of launcher and receiver barrels for pipeline segments throughout Algonquin's distribution system

MBCR, Natural Resource Mapping – Walpole, MA Wetland Scientist, 2010 Mr. Finamore delineated watersheds for culvert sizing using GIS and ground truthing.

Central Maine Power, Co., Natural Resource Mapping and State and Federal Permit Application – ME Wetland Scientist, 2009-Present Mr. Finamore performed wetland delineations along proposed transmission line corridors, performed vernal pool surveys, performed routine stormwater inspections, performed invasive species inventories, field located resources and setbacks for pre-construction, prepared GIS maps and data tables for associated NRPA, Site Location of Development, and Army Corps of Engineers permitting, provided survey assistance on structure location and conductor height over major river crossings.

First Wind & 3Phase, Land Survey – Lincoln, ME Survey Technician, 2010 Mr. Finamore performed structure layout for the collector and transmission line servicing 40 wind turbines.

NSTAR, Natural Resource Mapping – RI Wetland Scientist, 2010 Mr. Finamore performed wetland delineations along an existing transmission line.

Town of Morrisville, FERC Pre-application Document – Morrisville, VT Ecologist, 2010 Mr. Finamore collected existing condition information regarding geologic, soil, wetland, wildlife, botanical, and rare, threatened and endangered species pertinent to FERC relicensing from federal, state, and local agencies for four hydroelectric dams.

Bangor Hydro, Natural Resource Mapping and State and Federal Permit Application, Ellsworth – ME Wetland Scientist, 2009-2010 Mr. Finamore performed wetland delineations along proposed transmission line corridors, assessed potential access roads for viability, prepared GIS maps and data tables for associated NRPA, Site Location of Development, and Army Corps of Engineers permitting.

National Grid, A127, Natural Resource Mapping – MA Wetland Scientist, 2009 Mr. Finamore performed wetland delineations for reconductoring along the A126 line.

VELCO, PV-20, Natural Resource Mapping – VT Wetland Scientist, 2009 Mr. Finamore performed wetland delineations, wetland function and values assessments, stream classifications, and natural community surveys along existing transmission line right-of-ways.

L.L. Bean, Inc., Natural Resource Mapping and Permitting – Freeport, ME Wetland Scientist & Survey Technician, 2005-2008 Mr. Finamore performed wetland delineations, vernal pool surveys, topographic mapping, and prepared Natural



Resource Protection Act applications and assisted with Site Location of Development Act applications.

First Wind, Natural Resource Mapping – ME Wetland Scientist, 2006-2007 Mr. Finamore performed wetland delineations and vernal pool surveys for the First Wind Stetson Wind Farm and associated transmission line corridors.

Bangor Hydro Electric Company, Natural Resource Mapping – Bangor, ME Wetland Scientist, 2008 Mr. Finamore performed wetland delineations and vernal pool surveys for the rebuild of Line 64.

Maine Coast Heritage Trust, Natural Resource Inventory – Stonington, ME Wetland Scientist, 2009 Mr. Finamore performed a Natural Resource inventory of 11 properties managed by MCHT. Inventories included gathering of available GIS data, historical aerial photography, and historical accounts of land use, vegetative inventories, soil evaluations, and wildlife observations.

Zyacorp Cinemagic, Natural Resource Mapping, Environmental Permit Applications, Environmental Site Assessment and Topographic Mapping – Westbrook and Saco, ME Environmental Scientist & Survey Technician, 2005-2009 Mr. Finamore performed wetland delineations, vernal pool surveys, topographic mapping on commercial properties. Mr. Finamore prepared environmental permit applications under Maine's Natural Resource Protection Act and a Preliminary Environmental Assessment on the Saco property.

New England College, Environmental Permit Application – Henniker, NH Wetland Scientist, 2009 Mr. Finamore prepared environmental permit applications under New Hampshire's Fill and Dredge in Wetlands statute for the installation of an athletic field.

Bangor Retirement Community, Wetland Mitigation Design and Monitoring – Bangor, ME Wetland Scientist, 2007-2009 Mr. Finamore assisted with the design of a wetland creation area mitigating over an acre of wetland disturbance. Mr. Finamore performed annual monitoring of the mitigation area and submitted reports to the Maine Department of Environmental Protection.

Town of Wells, Salt Marsh Erosion Monitoring – Wells, ME Wetland Scientist, 2004 Mr. Finamore mapped erosional features within a coastal marsh and inventoried vegetation and wildlife

CERTIFICATIONS AND TRAINING

Certified Wetland Scientist, #267, NH Licensed Site Evaluator, #391, ME

AFFILIATIONS

Maine Association of Wetland Scientists – Member (Member since 2005) Maine Association of Site Evaluators – Member (Member since 2005)

ATTACHMENT C U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION DATA FORMS

Applicant/Owner: Eolian Rer	roject	City/0	County: Antrim		Sampling Date: 10-Aug-11
	newable Energy, LLC		Sta	te: NH	Sampling Point: AN1 Wet
Investigator(s): AF JG		Se	ction, Township, Range:	S. T.	
Landform (hillslope, terrace	e, etc.): Hillside		relief (concave, convex, r		
Subregion (LRR or MLRA):		 Lat.:	Long		Datum:
					-
Soil Map Unit Name:				— INVVI CIASSIII	cation: PFO
Are climatic/hydrologic con	ditions on the site ty	pical for this time of year?	Yes ● No ○	(If no, explain in	
Are Vegetation , So	il 🗌 , or Hydrol	logy significantly distu	urbed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, So	il 🗌 , or Hydrol	logy 🗌 naturally problen	natic? (If needed,	explain any answe	rs in Remarks.)
Summary of Finding	gs - Attach site		ling point location	s, transects,	important features, etc.
Hydrophytic Vegetation Pro		No O			
Hydric Soil Present?	Yes	No O	Is the Sampled Area within a Wetland?	Yes ● No ○	
Wetland Hydrology Presen	t? Yes 💿	No O			
Hydrology					
Wetland Hydrology Indicat	tors:			Secondary Indicato	rs (minimum of 2 required)
Primary Indicators (minim		check all that apply)		Surface Soil Cr	
Surface Water (A1)		✓ Water-Stained Leaves (B9)	Drainage Patte	
✓ High Water Table (A2)		Aquatic Fauna (B13)	,	Moss Trim Line	es (B16)
Saturation (A3)		Marl Deposits (B15)		Dry Season Wa	ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide Odor (C	1)	Crayfish Burro	ws (C8)
			and Living Poots (C2)		
Sediment Deposits (B2)		Oxidized Rhizospheres alo	ing Living Roots (C3)		ble on Aerial Imagery (C9)
Sediment Deposits (B2) Drift deposits (B3)		Presence of Reduced Iron	(C4)	Stunted or Stre	essed Plants (D1)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4)		Presence of Reduced Iron Recent Iron Reduction in	(C4)	Stunted or Stre	essed Plants (D1) osition (D2)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ial Imagery (R7)	Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7)	(C4) Tilled Soils (C6)	Stunted or Stre Geomorphic Po Shallow Aquita	essed Plants (D1) osition (D2) rd (D3)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4)		Presence of Reduced Iron Recent Iron Reduction in	(C4) Tilled Soils (C6)	Stunted or Stre	essed Plants (D1) osition (D2) rd (D3) hic Relief (D4)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeri	ave Surface (B8)	Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) Other (Explain in Remarks	(C4) Tilled Soils (C6)	Stunted or Stre Geomorphic Po Shallow Aquita Microtopograp	essed Plants (D1) osition (D2) rd (D3) hic Relief (D4)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeri Sparsely Vegetated Conca	Yes No	Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) Other (Explain in Remarks	(C4) Tilled Soils (C6)	Stunted or Stre Geomorphic Po Shallow Aquita Microtopograp	essed Plants (D1) osition (D2) rd (D3) hic Relief (D4)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeri Sparsely Vegetated Conca	ave Surface (B8)	Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) Other (Explain in Remarks	(C4) Tilled Soils (C6) 3	Stunted or Stre Geomorphic Pc Shallow Aquita Microtopograp FAC-neutral Te	essed Plants (D1) position (D2) rd (D3) hic Relief (D4) est (D5)
Sediment Deposits (B2) Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeri Sparsely Vegetated Conca Field Observations: Surface Water Present?	Yes No	Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) Other (Explain in Remarks	(C4) Tilled Soils (C6) 3	Stunted or Stre Geomorphic Po Shallow Aquita Microtopograp	essed Plants (D1) osition (D2) rd (D3) hic Relief (D4)

VEGETATION - Use scientific names of plan	ants Dominant Species?				Sampling Point: AN1 Wet				
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test worksheet:				
1. Acer rubrum	20	V	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)				
2. Picea mariana	20		50.0%	FACW-	That are OBE, FAOW, OF FAO.				
3	0	\Box	0.0%		Total Number of Dominant Species Across All Strata: 8 (B)				
4.	0		0.0%		Species Across All Strata: 8 (B)				
5	0	\Box	0.0%		Percent of dominant Species				
6	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)				
7	0		0.0%		Prevalence Index worksheet:				
	40	= Tc	tal Cove	- ——— r	Total % Cover of: Multiply by:				
Sapling/Shrub Stratum (Plot size: 15')					0BL species 0 x 1 = 0				
1. Betula alleghaniensis	10		25.0%	FAC	FACW species 83 x 2 = 166				
2. Picea mariana	15	V	37.5%	FACW-	FAC species 30 x 3 = 90				
3. Vaccinium corymbosum	15	\	37.5%	FACW-	FACU species $0 \times 4 = 0$				
4			0.0%		UPL species $0 \times 5 = 0$				
5			0.0%		(8)				
6			0.0%		Column Totals: 113 (A) 256 (B)				
7	0	Ш	0.0%		Prevalence Index = B/A = 2.265				
Herb Stratum (Plot size: 5')	40	= To	tal Cove	r	Hydrophytic Vegetation Indicators:				
1.Carex intumescens	15	~	45.5%	FACW+	Rapid Test for Hydrophytic Vegetation				
2.0smunda cinnamomea	10		30.3%	FACW	 ✓ Dominance Test is > 50% ✓ Prevalence Index is ≤3.0 ¹ 				
3. Coptis trifolia	8		24.2%	FACW					
4.	0		0.0%		Morphological Adaptations ¹ (Provide supporting				
5.	0		0.0%		data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)				
6.	0	\Box	0.0%		Problematic Hydrophytic vegetation - (Explain)				
7.	0	\Box	0.0%		¹ Indicators of hydric soil and wetland hydrology must				
8.	0		0.0%		be present, unless disturbed or problematic.				
9.	0		0.0%		Definitions of Vegetation Strata:				
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11.	0		0.0%		at breast height (DBH), regardless of height.				
12.	0		0.0%						
Woody Vine Stratum (Plot size:)	33	= To	tal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall				
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2	0		0.0%		size, and woody plants less than 3.28 ft tall.				
3	0		0.0%	-	Woody vine All woody vines are the 2.200 ft is				
4	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in height.				
11			ntal Cove	 r					

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

Yes ● No ○

Hydrophytic Vegetation Present?

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN1 Wet

_ · · · · · · · · · · · · · · · · · · ·	needed to document the indicator or confirm the	absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type 1 Loc²	Texture Remarks
0-10 10YR 2/1 100%	Color (Hoist) 78 Type 1 Loc-	
0-10 10TR 2/1 100%		Muck
		·
		·
		· <u>- </u>
1 Turner C. Concentration D. Donlotion PM - Podu	ced Matrix, CS=Covered or Coated Sand Grains ² Loca	eties: DL Dara Lining M Matrix
	;ed Matrix, CS=Covered of Coated Salid Glains -Loca	
Hydric Soil Indicators: Histosol (A1)	Debaglio Balance Confess (CO) (LDD D	Indicators for Problematic Hydric Soils: 3
l —	☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2) Black Histic (A3)	Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
Thick Dark Surface (A12)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	☐ Piedmont Floodplain Soils (F19) (MLRA 149B) ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)		Red Parent Material (TF2)
Stripped Matrix (S6)		☐ Very Shallow Dark Surface (TF12)
☐ Dark Surface (S7) (LRR R, MLRA 149B)		Other (Explain in Remarks)
³ Indicators of hydrophytic vegetation and wetlan	d hydrology must be present, unless disturbed or proble	
	2 Hydrology	T
Restrictive Layer (if observed):		
Type: <u>Ledge</u> Depth (inches): 10		Hydric Soil Present? Yes No
		,
Remarks:		

Project/Site: Antrim Wind Project			City/County	: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable En	ergy, LLC			Sta	te: NH	Sampling Point: AN1 Upland
Investigator(s): AF JG			Section.	Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Hillside		_	(concave, convex, n		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					-	
Soil Map Unit Name:					NWI classif	ication:
Are climatic/hydrologic conditions or	the site ty	pical for this time of ye	ear?	Yes No	(If no, explain in	*
Are Vegetation . , Soil .	, or Hydrolo	ogy 🗌 significant	ly disturbed	? Are "Normal	Circumstances" p	oresent? Yes • No ·
Are Vegetation . , Soil .	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Att		<u> </u>	ampling	point location	ıs, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •				
Hydric Soil Present?	Yes 🔾	No •		he Sampled Area hin a Wetland?	Yes \bigcirc No $lacktriangle$)
Wetland Hydrology Present?	Yes 🔾	No •				
Hydrology						
Wetland Hydrology Indicators:	roquirod.	abaak all that annly)				ors (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)	e requireu;		(DO)		Surface Soil Co	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1)			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizospho		ng Roots (C3)		ible on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduc	-		Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled S	Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery		Other (Explain in R	Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface	(B8)				FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):		<u> </u>		
Water Table Present? Yes	No 💿	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No •	Depth (inches):		Wetland Hydr	ology Present?	Yes ○ NO ⑤
Describe Recorded Data (stream gai	uge, monito	oring well, aerial photo	s, previous i	inspections), if avail	able:	
Remarks:						

/EGETATION - Use scientific names of	Dominant Species?			Sampling Point: AN1 Upland					
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test w				
	25	V	30.1%	FACU	Number of Dominant That are OBL, FACW			2	(A)
Picea rubens	22	V	39.8%	FACU			-		
Acer rubrum	25	V	30.1%	FAC	Total Number of Don Species Across All St			7	(B)
			0.0%		Species Across Air Sti	ata.	-		(D)
			0.0%		Percent of domina			20 (0)	(4 (5)
			0.0%		That Are OBL, FAC	CW, or FA	C:	28.6%	(A/B)
			0.0%		Prevalence Index v	vorksheet	:		
		= Tc	tal Cove	r	Total % Cov		Multiply	/ by:	
apling/Shrub Stratum (Plot size: 15')		_			OBL species	0	x 1 =	0	
Picea rubens	10	\	55.6%	FACU	FACW species	0	x 2 =	0	-
. Fagus grandifolia	3		16.7%	FACU	FAC species	38	x 3 =	114	_
_ Vaccinium angustifolium		\	27.8%	FACU-		91		364	-
			0.0%		FACU species	0	x 4 =	0	-
•	0		0.0%		UPL speci es		x 5 =		-
•	0		0.0%		Column Totals:	129	(A)	478	(B)
-	0		0.0%		Prevalence In	dex = B/A	. =	3.705	
lerb Stratum (Plot size: 5')		= To	tal Cove	r	Hydrophytic Vegeta	ation Indi	rators.		
erb stratum (Piot size. 3					Rapid Test for			ation	
1 .Aralia nudicaulis			16.1%	FACU	Dominance Te	•			
2.Lycopodium obscurum		\mathbf{V}	32.3%	FACU	Prevalence In				
3.Malanthemum canadense	3	Ш	9.7%	FAC-	I =			ovido cum	ortina
4.trillium spp.	3		9.7%		Morphological Adaptations ¹ (Provide suppor data in Remarks or on a separate sheet)				
5.Trientalis borealis	10	✓	32.3%	FAC	Problematic F	lydrophyt	ic Vegeta	tion ¹ (Ex	olain)
6			0.0%						
7			0.0%		Indicators of hyden be present, unless	dric soil a	nd wetlan	d hydrolo	gy mus
8	0		0.0%						
9	0		0.0%		Definitions of Ve	egetatio	n Strata:	:	
0	0		0.0%		Tree - Woody plan	ts, 3 in. (7	'.6 cm) or	more in o	liamete
1	0		0.0%		at breast height (D	BĤ), regà	rdless of	height.	
2	0		0.0%		 Sapling/shrub - Wo	andy plant	o logo the	an 2 in Di	امم لاد
	31	= To	tal Cove	r	greater than 3.28 f				on anu
Voody Vine Stratum (Plot size:)									
			0.0%		Herb - All herbaced size, and woody pl				rdless
2			0.0%		size, and woody pi	anto 1688	uiaii 3.28	ıı tall.	
3			0.0%		Woody vine - All w	oody vine	s greater	than 3.28	ft in
1		Ш	0.0%		height.				
	0	= To	tal Cove	r					
					Hydrophytic Vegetation				
					Present? Ye	es 🔾 🗈	10 💿		

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN1 Upland

Profile Descr	ription: (Desc	ribe to	the depth	n needed to document the indicator or confirm the	e absence of indicators.)	
Depth (inches)		Matrix	_ ~	Redox Features		5 · · · · alta
	Color (m		%	Color (moist) % Type 1 Loc²	Texture .	Remarks
0-6	10YR	3/2	100%		Loam	
6-7	2.5Y	5/3	100%		Fine Loamy Sand	
7-16	10YR	4/3	100%		Fine Sandy Loam	
16+	2.5Y	5/6	100%		Fine Sandy Loam	
<u></u> _						
			-			
1 T. ma. C. Con		Danlatia	- DM Do	the tribute of Covered or Control Sand Crains 21 o		t
• • •		Depletio	n. Rivi=ked	duced Matrix, CS=Covered or Coated Sand Grains 2Log	· · · · · · · · · · · · · · · · · · ·	
Hydric Soil I				Polyvalue Below Surface (S8) (LRR R,	Indicators for Probler	
	pedon (A2)			MLRA 149B)		RR K, L, MLRA 149B)
Black Hist				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox	
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	☐ Dark Surface (S7) (I☐ Polyvalue Below Sur	
	Below Dark Su	ırface (A	.11)	Depleted Matrix (F3)	Thin Dark Surface (
☐ Thick Dar	rk Surface (A12	2)		Redox Dark Surface (F6)		sses (F12) (LRR K, L, R)
Sandy Mu	uck Mineral (S1)		Depleted Dark Surface (F7)		Soils (F19) (MLRA 149B)
	eyed Matrix (S4	4)		Redox Depressions (F8)		(MLRA 144A, 145, 149B)
Sandy Re					Red Parent Material	
	Matrix (S6)	- MIDA	1 4 4 0 D)		Very Shallow Dark S	
	face (S7) (LRR				Other (Explain in Re	marks)
³ Indicators o	f hydrophytic v	egetatio	n and wetl	and hydrology must be present, unless disturbed or prol	blematic.	
Restrictive L	ayer (if obse	rved):				
Type:						Yes ○ No ●
Depth (inc	ches):				Hydric Soil Present?	Yes ○ No •
Remarks:						



AN1 Wetland



AN1 Wetland



AN1 Upland

Project/Site: Antrim Wind Project			City/Coun	ty: Antrim		Sampling Date: 10-	Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	ate: NH	Sampling Point:	AN2 Wet
Investigator(s): AF JG			Section	n, Township, Range:	S. T.	 R.	
Landform (hillslope, terrace, etc.):	Ridgetop		_	f (concave, convex, r		Slope:	0.0% / 0.0°
Subregion (LRR or MLRA):		Lat.:		Lon	n ·	· Datur	
Soil Map Unit Name:						ication: PFO/PSS	
Are climatic/hydrologic conditions of	on the site typ	oical for this time of y	ear?	Yes ● No ○	(If no, explain in		
Are Vegetation , Soil	, or Hydrolo	ogy Significant	ly disturbe	d? Are "Norma	l Circumstances" p	oresent? Yes •	No O
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	problemation	? (If needed,	explain any answe	ers in Remarks.)	
Summary of Findings - At			ampling	g point location	ns, transects,	, important fea	tures, etc.
Hydrophytic Vegetation Present?		No O					
Hydric Soil Present?	Yes 💿	No O		the Sampled Area within a Wetland?	Yes ● No C)	
Wetland Hydrology Present?	Yes 💿	No O					
Hydrology							
Wetland Hydrology Indicators:					Socondary Indicate	ors (minimum of 2 requi	rad)
Primary Indicators (minimum of or	ne required;	check all that apply)			Surface Soil C	ors (minimum of 2 requi racks (B6)	red)
Surface Water (A1)		✓ Water-Stained Lea	ives (B9)		Drainage Patte		
✓ High Water Table (A2)		Aquatic Fauna (B1			Moss Trim Lin		
Saturation (A3)		Marl Deposits (B15	5)		Dry Season W	ater Table (C2)	
Water Marks (B1)		Hydrogen Sulfide	Odor (C1)		Crayfish Burro	ows (C8)	
Sediment Deposits (B2)		Oxidized Rhizosph	eres along L	iving Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc				ressed Plants (D1)	
☐ Algal Mat or Crust (B4)☐ Iron Deposits (B5)		Recent Iron Reduc		l Soils (C6)	Geomorphic P		
Inundation Visible on Aerial Image	rv (B7)	☐ Thin Muck Surface	` '		Shallow Aquita	ohic Relief (D4)	
Sparsely Vegetated Concave Surface		Uther (Explain in F	Remarks)		FAC-neutral To		
Field Observations:) O						
Surface Water Present? Yes		Depth (inches):					
Water Table Present? Yes	No O	Depth (inches):	9			Yes ● No ○	
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches):	0	Wetland Hyd	rology Present?	Yes ⊕ No ∪	
Describe Recorded Data (stream g Remarks:	auge, monito	ring well, aerial photo	os, previou:	s inspections), if avai	ilable:		

V V	55.6% 44.4% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover	FACW- FAC+	Number of Dominan That are OBL, FACW Total Number of Don Species Across All St Percent of domina That Are OBL, FAC Prevalence Index of Total % Cov OBL species FACW species FACU species FACU species Column Total s: Prevalence In Hydrophytic Veget Rapid Test fo	ant Species V, or FAC: ominant ditrata: ant Species CW, or FAC worksheet ver of: 100 55 30 0 185 andex = B/A tation India	s C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A)	100 110 90 0 0 300 1.622	(A) (B) (A/B)
— = To —	44.4% 0.0% 0.0% 0.0% 0.0% 0.0% 33.3% 33.3% 0.0% 0.0	FACW-FACW-	That are OBL, FACW Total Number of Doi Species Across All St Percent of domina That Are OBL, FAC Prevalence Index of Total % Cov OBL species FACW species FACU species FACU species Col umn Total s: Prevalence Index of Preva	worksheet ver of: 100 55 30 0 185 ndex = B/A tation India	C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) A = cators:	6 100.0% y by: 100 110 90 0 0 300 1.622	(B) _ (A/B)
= Total	0.0% 0.0% 0.0% 0.0% 0.0% 0.08 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FAC+ FACW-	Total Number of Dor Species Across All St Percent of domina That Are OBL, FAI Prevalence Index of Total % Cov OBL species FACW species FACU species FACU species UPL species Column Totals:	ant Species (CW, or FAC) worksheet ver of: 100 55 30 0 0 185 ndex = B/A tation India	C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) A = cators:	100.0% y by: 100 110 90 0 300 1.622	(B) _ (A/B)
- = T(0.0% 0.0% 0.0% 0.0% 0.1 Cover 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FACW-	Prevalence Index Total % Cov OBL species FACW species FACU species FACU species UPL species Column Totals: Prevalence Index Prevalence Index Prevalence Index Prevalence Index Prevalence Index Hydrophytic Veget	ant Species CW, or FAI worksheet ver of: 100 55 30 0 0 185 ndex = B/A tation India	C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) A = cators:	100.0% y by: 100 110 90 0 300 1.622	(A/B)
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	0.0% 0.0% 0.0% 0.08 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FACW-	Percent of domina That Are OBL, FAI Prevalence Index Total % Cov OBL species FACW species FACU species UPL species Column Totals: Prevalence In Hydrophytic Veget	ant Species CW, or FAC worksheet ver of: 100 55 30 0 185 ndex = B/A tation India	C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) A = cators:	100.0% y by: 100 110 90 0 300 1.622	(A/B)
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	0.0% 0.0% 0tal Cover 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FACW-	Prevalence Index Total % Cov OBL species FACW species FACU species UPL species Column Totals: Prevalence In	worksheet ver of: 100 55 30 0 185 ndex = B/A tation India	C: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) A = cators:	y by: 100 110 90 0 0 300 1.622	- ` ´ ´
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	0.0% otal Cover 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% ptal Cover 90.9%	FACW- FACW-	Prevalence Index of Total % Cov. OBL speciles FACW speciles FACU speciles UPL speciles Collumn Totals: Prevalence Interpretation	worksheet ver of: 100 55 30 0 0 185 ndex = B/A tation Indicates	:: Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A) Cators:	y by: 100 110 90 0 0 300 1.622	- ` ´ ´
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	33.3% 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FACW-	Total % Cov OBL species FACW species FACU species UPL species Column Totals: Prevalence In	ver of: 100 55 30 0 0 185 andex = B/A tation India	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (A)	100 110 90 0 0 300 1.622	 - - - - (B)
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	33.3% 33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.	FACW- FACW-	OBL species FACW species FACU species UPL species Column Totals: Prevalence In	100 55 30 0 0 185 ndex = B/A	x 1 = x 2 = x 3 = x 4 = x 5 = (A)	100 110 90 0 0 300 1.622	
✓	33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	FAC+ FACW-	FACW species FAC species FACU species UPL species Column Totals: Prevalence In Hydrophytic Veget	55 30 0 0 185 ndex = B/A	x 2 = x 3 = x 4 = x 5 = (A)	110 90 0 0 300 1.622	- - - - (B)
✓	33.3% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	FAC+ FACW-	FAC species FACU species UPL species Column Totals: Prevalence In Hydrophytic Veget	$ \begin{array}{r} 30 \\ 0 \\ 0 \\ 185 \end{array} $ ndex = B/A	x 3 = x 4 = x 5 = (A) A = cators:	90 0 0 300 1.622	- - - (B)
✓	33.3% 0.0% 0.0% 0.0% 0.0% otal Cover	FACW-	FACU species UPL species Column Totals: Prevalence In Hydrophytic Veget	$\frac{0}{0}$ $\frac{185}{185}$ $186 = B/A$ $186 = B/A$	x 4 = x 5 = (A) A =	0 0 300 1.622	- - - (B)
	0.0% 0.0% 0.0% 0.0% otal Cover		UPL species Column Totals: Prevalence In Hydrophytic Veget	0 185 ndex = B/A	x 5 = (A) A = cators:	0 300 1.622	- - (B)
	0.0% 0.0% 0.0% otal Cover		Col umn Total s: Prevalence In Hydrophytic Veget	185 ndex = B/A tation India	(A) A = cators:	300	(B)
	0.0% 0.0% otal Cover		Col umn Total s: Prevalence In Hydrophytic Veget	ndex = B/A	\ =cators:	1.622	(B)
	0.0% otal Cover		Hydrophytic Veget	tation Indi	cators:		
	90.9%		Hydrophytic Veget	tation Indi	cators:		
	-	OBL					
	-	OBL		n riyaropii	ytic veget	tation	
	4 5%		✓ Dominance T	Test is > 50)%		
	-	FACW	✓ Prevalence In	ndex is ≤3.	.0 ¹		
	4.5% 0.0%	FACW	☐ Morphological Adaptations ¹ (Provide supporting				
	0.0%		data in Rema		-		
	0.0%		Problematic I	Hydrophyti	ic Vegeta	tion ¹ (Exp	olain)
	0.0%		¹ Indicators of hy	vdric soil a	nd wetlan	d hydrolog	av must
	0.0%		be present, unless	s disturbed	d or proble	ematic.	gy
	0.0%		Definitions of V	/egetatio	n Strata:		
				. 0: /=	.		
							liameter
\Box				,,9			
						an 3 in. DE	3H and
-			greater than 3.26	it (IIII) tall.			
	0.0%						rdless o
	0.0%		size, and woody p	plants less	than 3.28	ft tall.	
	0.0%		Woody vine - All w	woody vine	s greater	than 3.28	ft in
	0.0%		height.	,	5		
_ = T	otal Cove	-					
	= To	0.0% 0.0% 0.0% 0.0%	0.0% 0.0% = Total Cover 0.0% 0.0% 0.0%	O.0% at breast height (I Sapling/shrub - W greater than 3.28 O.0% O.0% O.0% O.0% O.0% O.0% e Total Cover	at breast height (DBH), regal spreader than 3.28 ft (1m) tall	at breast height (DBH), regardless of Sapling/shrub - Woody plants less that greater than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants less than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants less than 3.28 ft (1m) tall Woody vine - All woody vines greater height.	at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DE greater than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, rega size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 height.

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN2 Wet

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)
Depth (inches)	. Color (i	Matrix	_ %	Redox Features Color (moist) % Type 1 Loc²	Texture Remarks
				Color (moist) 78 Type Loc-	
0-8	10YR	2/1	100%		Muck
8-15	2.5Y	5/1	100%		Sand
1 Type: C. Con		Doplotion	n DM Dod	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	stien. DL Para Lining M Matrix
• •		=Depletion	n. Rivi=Reu	uced Matrix, CS=Covered of Coated Sand Grains *Loca	
Hydric Soil I					Indicators for Problematic Hydric Soils : 3
☐ Histosol (✓ Histic Epi				Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hist	ແຕ (A3) າ Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Below Dark S	Surface (A1	11)	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	k Surface (A		,	Redox Dark Surface (F6)	☐ Thin Dark Surface (S9) (LRR K, L)
	uck Mineral (S	•		Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)
	eyed Matrix (Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Re					☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)☐ Red Parent Material (TF2)
	Matrix (S6)				☐ Very Shallow Dark Surface (TF12)
	face (S7) (LRI	R R, MLRA	149B)		Other (Explain in Remarks)
3 Indicators of	f hydronhytic	vogotation	a and watle	nd hydrology must be present, unless disturbed or proble	
			i and wella	ind frydrology fridst be present, driless disturbed of proble	eniauc.
Restrictive L	ayer (if obs	erved):			
Type:					Hydric Soil Present? Yes No
Depth (inc	hes):				Tryano don riesona. Tes C 140 C
Remarks:					

Project/Site: Antrim Wind Project			City/County	: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable En	nergy, LLC			Sta	te: NH	Sampling Point: AN2 upland
Investigator(s): AF JG			Section.	Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Ridgetop		_	(concave, convex, r		Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					NWI classif	
Soil Map Unit Name:						
Are climatic/hydrologic conditions o	n the site ty	pical for this time of y	ear?	res ● No ○	(If no, explain in	•
Are Vegetation , Soil	, or Hydrolo	ogy 🗌 significant	ly disturbed?	Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At		<u> </u>	ampling	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •				
Hydric Soil Present?	Yes 🔾	No •		he Sampled Area hin a Wetland?	Yes O No 🗨	
Wetland Hydrology Present?	Yes 🔾	No •				
Hydrology						
Wetland Hydrology Indicators:	o roquirod:	chack all that apply)				ors (minimum of 2 required)
Primary Indicators (minimum of on Surface Water (A1)	e requireu,		(DO)		Surface Soil C Drainage Patte	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1	• •		Moss Trim Lin	
Saturation (A3)		Marl Deposits (B15				dater Table (C2)
Water Marks (B1)		Hydrogen Sulfide			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph	eres along Livi	ng Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	ed Iron (C4)		Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled S	oils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surface		Other (Explain in F	Remarks)			ohic Relief (D4)
Sparsely vegetated concave surface	3 (88)				FAC-neutral T	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):		_		
Water Table Present? Yes	No 💿	Depth (inches):			rology Present?	Yes ○ No ●
Saturation Present? (includes capillary fringe) Yes		Depth (inches):				Tes UNU U
Describe Recorded Data (stream ga	uge, monito	oring well, aerial photo	os, previous i	nspections), if avai	lable:	
Remarks:						

/EGETATION - Use scientific names of p			ominant pecies?		Sampling Point: AN2 upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	
. Quercus rubra	35	V	58.3%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Pinus strobus	25	~	41.7%	FACU	
			0.0%		Total Number of Dominant Species Across All Strata: 7 (B)
			0.0%		Species Across Air Strata.
			0.0%		Percent of dominant Species
			0.0%		That Are OBL, FACW, or FAC: 28.6% (A/B)
			0.0%		Prevalence Index worksheet:
		 = To	otal Cove	r	Total % Cover of: Multiply by:
· • • • • • • • • • • • • • • • • • • •					0BL species 0 x 1 = 0
. Acer rubrum		✓	18.2%	FAC	FACW species $0 \times 2 = 0$
_ Betula papyrifera			9.1%	FACU	FAC species $20 \times 3 = 60$
. Fagus grandifolia		V	18.2%	FACU	FACU speci es 105 x 4 = 420
Picea rubens		✓	45.5%	FACU	UPL species $0 \times 5 = 0$
. Betula alleghaniensis			9.1%	FAC	
•	0		0.0%		Column Totals: 125 (A) 480 (B)
•	0		0.0%		Prevalence Index = $B/A = 3.840$
erb Stratum (Plot size: 5')	55	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1	F	~	E0 00/	FACIL	Rapid Test for Hydrophytic Vegetation
1. Vaccinium angustifolium		▼	50.0%	FACU-	☐ Dominance Test is > 50%
2.Trientalis borealis			50.0%	FAC	Prevalence Index is ≤3.0 ¹
3			0.0%		☐ Morphological Adaptations ¹ (Provide supporting
4 <u>. </u>			0.0%		data in Remarks or on a separate sheet)
5			0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6			0.0%		1
7			0.0%		¹ Indicators of hydric soil and wetland hydrology mus be present, unless disturbed or problematic.
8			0.0%		
9			0.0%		Definitions of Vegetation Strata:
0	0	Ш	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
1	0	Ш	0.0%		at breast height (DBH), regardless of height.
2	0		0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
No ado Nice Chartery (Diet size)	10	= To	otal Cove	r	greater than 3.28 ft (1m) tall
Voody Vine Stratum (Plot size:)					
			0.0%		Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall.
2			0.0%		size, and woody plants less than 5.20 it tall.
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in
1		Ш	0.0%		height.
	0	= To	otal Cove	r	
					Undershirtin
					Hydrophytic Vegetation Present? Yes No No

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN2 upland

Profile Desci	ription: (Desc	cribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		Matrix	_ ~	Redox Features		5
	Color (m		%	Color (moist) % Type 1 Loc²	Texture	Remarks
0-4	10YR	3/2	100%		Loam	
4-12	10YR	4/6	100%		Fine Sandy Loam	
12-16	10YR	5/8	100%		Fine Sandy Loam	
¹ Type: C=Con	centration. D=	Depletio	n. RM=Rec	luced Matrix, CS=Covered or Coated Sand Grains ² Loc.	ation: PL=Pore Lining. M=Matrix	
Hydric Soil		<u> </u>		·	Indicators for Problematic	Undria Caila . 3
Histosol (Polyvalue Below Surface (S8) (LRR R,		
	pedon (A2)			MLRA 149B)	2 cm Muck (A10) (LRR K,	
☐ Black His				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) 5 cm Mucky Peat or Peat	
Hydroger	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7) (LRR K	
☐ Stratified	Layers (A5)			Loamy Gleyed Matrix (F2)	Polyvalue Below Surface (
Depleted	Below Dark Su	urface (A	11)	Depleted Matrix (F3)	Thin Dark Surface (S9) (L	
Thick Dar	k Surface (A12	2)		Redox Dark Surface (F6)	Iron-Manganese Masses (
	uck Mineral (S1			☐ Depleted Dark Surface (F7) ☐ Redox Depressions (F8)	Piedmont Floodplain Soils	
	eyed Matrix (S	4)		☐ Redux Depressions (Fo)	Mesic Spodic (TA6) (MLRA	A 144A, 145, 149B)
Sandy Re					Red Parent Material (TF2)	
	Matrix (S6)	D 141 D4	4.400\		Very Shallow Dark Surface	e (TF12)
	face (S7) (LRR				Other (Explain in Remarks	5)
³ Indicators o	f hydrophytic \	/egetatio	n and wetla	and hydrology must be present, unless disturbed or prob	ematic.	
Restrictive L	ayer (if obse	rved):				
Type:						
Depth (inc	hes):				Hydric Soil Present? Yes	s ○ No ●
Remarks:						
ĺ						



AN2 Wetland



AN2 Wetland



AN2 Wetland



AN2 Upland

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy,	, LLC	Sta	te: NH	Sampling Point: AN3 Wet
Investigator(s): AF JG		Section, Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.): Ridq	etop L	.ocal relief (concave, convex, n		
Subregion (LRR or MLRA):	 Lat.:	Long	L:	Datum:
Soil Map Unit Name:			NWI classific	
·			_	
Are climatic/hydrologic conditions on the	site typical for this time of year	ar? Yes ● No ○	(If no, explain in	·
Are Vegetation, Soil, or	Hydrology L significantly	disturbed? Are "Normal	Circumstances" pi	resent? Yes No
Are Vegetation $\ \ \ \ \ \ \ \ \ \ \ \ \ $	Hydrology 🗌 naturally pro	oblematic? (If needed, e	explain any answe	rs in Remarks.)
Summary of Findings - Attach		impling point location	s, transects,	important features, etc.
	s • No O			
	s • No O	Is the Sampled Area within a Wetland?	Yes No	
Wetland Hydrology Present? Yes	s No			
Hydrology				
Wetland Hydrology Indicators:			Carandam, Indianta	(
Primary Indicators (minimum of one req	uired: check all that annly)			rs (minimum of 2 required)
Surface Water (A1)	✓ Water-Stained Leave	2c (R0)	Surface Soil Cra Drainage Patte	
High Water Table (A2)	Aquatic Fauna (B13)	• •	Moss Trim Line	
✓ Saturation (A3)	Marl Deposits (B15)		Dry Season Wa	
☐ Water Marks (B1)	Hydrogen Sulfide Oc	dor (C1)	Crayfish Burrov	vs (C8)
Sediment Deposits (B2)	Oxidized Rhizospher	es along Living Roots (C3)	Saturation Visit	ole on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced	d Iron (C4)	Stunted or Stre	ssed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction	on in Tilled Soils (C6)	Geomorphic Po	
Iron Deposits (B5)	☐ Thin Muck Surface (•	Shallow Aquita	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	U Other (Explain in Ne	marks)	✓ Microtopograph ✓ FAC-neutral Te	
			- The fleation fe	
Field Observations: Surface Water Present? Yes N	Depth (inches):			
	Depth (inches):			
Saturation Present?	Depth (inches): _	Wetland Hydr	ology Present?	Yes No
Describe Recorded Data (stream gauge,			able:	
Remarks:				

VEGETATION - Use scientific names of plants	Dominant
	Species?

VEGETATION - Ose scientific flames of pla	1113		ominant pecies?		Sampling Point: AN3 Wet
- O. (Diet size, 20)	Absolute	R	el.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		over	Status	Number of Dominant Species
1. Acer rubrum				FAC	That are OBL, FACW, or FAC: 5 (A)
2			0.0%		Total Number of Dominant
3			0.0%		Species Across All Strata: 5 (B)
4		Н	0.0%		Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
6			0.0%		
7		_			Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= 10	otal Cover	•	Total % Cover of: Multiply by: OBL species 20 x 1 = 20
1. Picea mariana	15	V	37.5%	FACW-	FACW species $50 \times 2 = 100$
2. Acer rubrum	5		12.5%	FAC	
3. Vaccinium corymbosum	20	✓	50.0%	FACW-	x v
4	0		0.0%		TACO Species X 4
5	0		0.0%		UPL species X 5 =
6	0		0.0%		Column Totals: 95 (A) 195 (B)
7	0		0.0%		Prevalence Index = B/A = 2.053
Herb Stratum (Plot size: 5')		= To	otal Cover	-	Hydrophytic Vegetation Indicators:
					Rapid Test for Hydrophytic Vegetation
1.Osmunda cinnamomea	15		42.9%	FACW	✓ Dominance Test is > 50%
2.Carex stricta 3.			57.1%	OBL	✓ Prevalence Index is ≤3.0 ¹
3 <u>.</u> 4.			0.0%		Morphological Adaptations ¹ (Provide supporting
5.			0.0%		data in Remarks or on a separate sheet)
5. 6.			0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)
7.			0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.			0.0%		be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
10.	0 0		0.0%		_
11			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0		0.0%		at breast height (DBH), regardless of height.
		ш - т	otal Cover		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)		- ''	otal Covel		greater than 3.28 ft (1m) tall
1	0_		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0_		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.
	0	= To	otal Cover	-	
					Hydrophytic
					Vegetation Vegetation
					Present? Yes No U
Remarks: (Include photo numbers here or on a separate she	eet.)				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN3 Wet

	ption: (Des	cribe to t	he depth	needed to document t	the indicator or con	firm the a	bsence of indicators.)	
Depth (inches)	Color (r	Matrix	_ %	Red_ Color (moist)	ox Features % Type 1	Loc2	Texture	Remarks
0-5	10YR	3/2	100%	Color (moist)	76 Type	LUC-	Sandy Loam	Remarks
			10076					
5-10	2.5Y	4/2					Loamy Sand	Tedge
10+								
								·
								·
							-	
¹ Type: C=Conc	entration. D	=Depletion	n. RM=Red	uced Matrix, CS=Covered	d or Coated Sand Grain	ns ² Locat	tion: PL=Pore Lining. M=N	Matrix
Hydric Soil Ir	ndicators:						Indicators for Probl	ematic Hydric Soils: 3
Histosol (A					Surface (S8) (LRR R,			(LRR K, L, MLRA 149B)
Histic Epipe				MLRA 149B)	oo (CO) (LDD D MLDA	1.40D)		ox (A16) (LRR K, L, R)
Black Histic					ce (S9) (LRR R, MLRA	1496)		or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Gleyed M	ineral (F1) LRR K, L)		☐ Dark Surface (S7)	(LRR K, L)
Stratified L			4)	Depleted Matrix			Polyvalue Below S	Surface (S8) (LRR K, L)
_	Selow Dark S Surface (A1		1)	Redox Dark Surf			Thin Dark Surface	
	k Mineral (S	•		Depleted Dark S				Masses (F12) (LRR K, L, R)
	ed Matrix (Redox Depression				ain Soils (F19) (MLRA 149B)
Sandy Red		54)						6) (MLRA 144A, 145, 149B)
Stripped M							Red Parent Mater	
	ce (S7) (LRF	R R, MLRA	149B)				☐ Very Shallow Dark☐ Other (Explain in	
				nd hydrology must be pr	ocont unloss disturbo	d or proble		remarks)
			i and wella	na nyarology mast be pr	esent, unless disturbe	d of proble	erriatic.	
Restrictive La	•	erved):						
Type: <u>led</u>							Hydric Soil Present?	Yes ● No ○
Depth (inch	es):_10							100 - 110 -
Remarks:								

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LL	<u> </u>	Stat	te: NH	Sampling Point: AN3 Upland
Investigator(s): AF JG	Sec	ction, Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.): Ridgeto	p Local r	relief (concave, convex, n	one): none	Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA):	Lat.:	Long	:	Datum:
Soil Map Unit Name:			NWI classifi	
Are climatic/hydrologic conditions on the sit	timized for this time of year?	Yes No	—	Daulea\
			(If no, explain in	· · · · ·
	Irology		Circumstances" p	
	Irology L naturally problema	,	explain any answe	
Summary of Findings - Attach s		ing point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes		Is the Sampled Area		
Hydric Soil Present? Yes		within a Wetland?	Yes O No •	
Wetland Hydrology Present? Yes	No ●			
Hydrology				
Wetland Hydrology Indicators:				rs (minimum of 2 required)
Primary Indicators (minimum of one required Surface Water (A1)			Surface Soil Cr	
High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)		☐ Drainage Patte	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1))	Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres alon		Saturation Visi	ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron ((C4)	Stunted or Stre	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Ti	illed Soils (C6)	Geomorphic Po	
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquita	` '
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	Uther (Explain in Remarks)	l	☐ Microtopograp ☐ FAC-neutral Te	
Sparsely vegetated contrave surface (50)			FAC-Neunan re	est (D5)
Field Observations: Surface Water Present? Yes No				
	• • • • • • • • • • • • • • • • • • • •			
Water Table Present? Yes No		Wetland Hydr	ology Present?	Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):		ology i resent.	100 - 110 -
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previ	ious inspections), if availa	able:	
Remarks:				

Tree Stratum	VEGETATION - Use scientific names of p			ominant pecies?		Sampling Point: AN3 Upland
1. Pieca rubens 3 3	Tree Stratum (Plot size: 30')		Re	el.Strat.		
2. Pinus strobus	Picea rubens	66	V	66.7%	FACU	
0) Dinus strobus	22	V	33.3%	FACU	
0 0.0% 0.0% That Are OBL, FACW, or FAC: 0.0% (A/B)				0.0%		
O				0.0%		Species across all strata:
0				0.0%		
Prevalence Index worksheet: Total % Cover of: Multiply by:				0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)
Sapling/Shrub Stratum (Plot size: 15') 99	,			0.0%		Prevalence Index worksheet:
Picea rubens			 = To		r	
D		10		100.00/	FACU	0BL species 0 x 1 = 0
O					FACU	FACW species $0 \times 2 = 0$
						FAC species $0 \times 3 = 0$
D						445
Column Total s: 115	•	0				· · · · · · · · · · · · · · · · · · ·
	•					(5)
Total Cover Total Cover	•					Column lotals: 115 (A) 400 (D)
1. Quercus rubra 3	·		Ш	0.0%		Prevalence Index = B/A = 4.000
1. Quercus rubra 2. Vaccinium angustifolium 3.	Herb Stratum (Plot size: 5')	10	= To	otal Cove	r	
2. Vaccinium angustifolium 3.	1 Ouercus rubra	3	V	50.0%	FACU-	Rapid Test for Hydrophytic Vegetation
Prevalence Index is \$3.0 1						☐ Dominance Test is > 50%
4.	ব				17100	Prevalence Index is ≤3.0 ¹
5.	Λ ⁻					Morphological Adaptations ¹ (Provide supporting
6.						
7.						Problematic Hydrophytic Vegetation ¹ (Explain)
be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diamete at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall Period of the size: Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diamete at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation	7					1 Indicators of hydric soil and wetland hydrology must
9.	0					be present, unless disturbed or problematic.
0.						Definitions of Vegetation Strata:
1						
2.						
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall O						at breast height (DBH), regardless of height.
1	۷		_			Sapling/shrub - Woody plants less than 3 in. DBH and
1	Woody Vine Stratum (Plot size:)	6	= 10	otal Cove	r	greater than 3.28 ft (1m) tall
2		0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
3			\Box			
4	<u>د. </u>		\Box			Manda de la Contraction de la
0 = Total Cover Hydrophytic Vegetation				-		
Hydrophytic Vegetation	Т.				-	l noight.
Vegetation Veg Ala A			- 10	Jan Gove	•	
Vegetation Veg						
Vegetation Veg Ala A						
						Hydrophytic
Present? 163 C NO C						
						Present? 163 C NO C

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN3 Upland

Profile Desci	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		/latrix	_ ~	Redox Features		Dlin
	Color (m		%	Color (moist) % Type 1 Loc²	Texture	Remarks
0-3	10YR	3/2	100%		Loam	
3-5	2.5Y	5/1	100%		Sand	
5-12	10YR	4/4	100%		Loamy Sand	_
12+						bedrock
					P	
					-	
					-	
						_
			-			
		Depletio	n. RM=Rec	luced Matrix, CS=Covered or Coated Sand Grains ² Loca		
Hydric Soil					Indicators for Prob	lematic Hydric Soils: 3
Histosol (Polyvalue Below Surface (S8) (LRR R, MLRA 149B)		(LRR K, L, MLRA 149B)
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Red	ox (A16) (LRR K, L, R)
Black His				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Layers (A5)			Depleted Matrix (F3)	Polyvalue Below	Surface (S8) (LRR K, L)
	Below Dark Su		11)	Redox Dark Surface (F6)	Thin Dark Surface	e (S9) (LRR K, L)
	rk Surface (A12	•		Depleted Dark Surface (F7)	Iron-Manganese	Masses (F12) (LRR K, L, R)
	uck Mineral (S1)			Redox Depressions (F8)		ain Soils (F19) (MLRA 149B)
	eyed Matrix (S4	.)				6) (MLRA 144A, 145, 149B)
Sandy Re	Matrix (S6)				Red Parent Mater	
	face (S7) (LRR	р мірл	1/0R)			
					Other (Explain in	Remarks)
³ Indicators o	f hydrophytic v	egetatio	n and wetla	and hydrology must be present, unless disturbed or probl	ematic.	
Restrictive L	ayer (if obser	ved):				
Type: _be	edrock					
Depth (inc	ches): 12				Hydric Soil Present?	Yes ○ No •
Remarks:						



AN3 Wetland



AN3 Upland

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: AN4 Wet
Investigator(s): AF JG	Sec	tion, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Ridgetop		elief (concave, convex, n		
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
			-	
Soil Map Unit Name:		<u> </u>	— INVVI CIASSIII	cation: PFO
Are climatic/hydrologic conditions on the site ty	pical for this time of year?	Yes ● No ○	(If no, explain in	·
Are Vegetation , Soil , or Hydrol	ogy significantly distur	bed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrol	ogy 🗌 naturally problema	ntic? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site	<u> </u>	ng point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No O			
Hydric Soil Present? Yes •	No O	Is the Sampled Area within a Wetland?	Yes ⊙ No ○	
Wetland Hydrology Present? Yes	No O			
Hydrology				
Wetland Hydrology Indicators:			C	() , , , , , , , , , , , , , , , , , ,
Primary Indicators (minimum of one required;	check all that annly)			rs (minimum of 2 required)
Surface Water (A1)	✓ Water-Stained Leaves (B9)		Surface Soil Cr Drainage Patte	
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Line	
✓ Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
☐ Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burro	ws (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres alon	g Living Roots (C3)	Saturation Visi	ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stre	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Ti	lled Soils (C6)	Geomorphic Po	
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)		✓ Microtopograp ✓ FAC-neutral Te	
Sparsery vegetated concave surface (Bo)			▼ FAC-neutral Te	est (D5)
Field Observations: Surface Water Present? Yes No No	Donath (inches)			
	Depth (inches):			
Water Table Present? Yes No •	Depth (inches):	Wetland Hydr	ology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):0			
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previ	ous inspections), if avail	able:	
Remarks:				
sphagum carpet				

VEGETATION - Use scientific names of plan	nts		ominant pecies?		Sampling Point: AN4 Wet
Tree Stratum (Plot size: 30')	Absolute % Cover	R	el.Strat.	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	50	~	100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0		0.0%		
3.			0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
4.	0		0.0%		Species Across Air Strata.
5.			0.0%		Percent of dominant Species
6.	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
7.	0		0.0%		Prevalence Index worksheet:
(2)	50	= To	otal Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')					0BL species 0 x 1 = 0
1. Acer rubrum	15	✓	33.3%	FAC	FACW species 35 x 2 = 70
2. Vaccinium corymbosum		✓	66.7%	FACW-	FAC species 65 x 3 = 195
3	0		0.0%		FACU species $0 \times 4 = 0$
4	0		0.0%		UPL species $0 \times 5 = 0$
5	0		0.0%		· .
6	0		0.0%		Column Totals:
7	0	Ш	0.0%		Prevalence Index = B/A = 2.650
Herb Stratum (Plot size: 5')	45	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	5	~	100.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.	0		0.0%	- 171011	✓ Dominance Test is > 50%
3.	0		0.0%		✓ Prevalence Index is ≤3.0 ¹
4.	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7.	0		0.0%		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.	0		0.0%		be present, unless disturbed or problematic.

Definitions of Vegetation Strata: 9. 0.0% 10. 0 0.0% Tree - Woody plants, 3 in. (7.6 cm) or more in diameter 11. 0.0% at breast height (DBH), regardless of height. 12. 0.0% Sapling/shrub - Woody plants less than 3 in. DBH and = Total Cover Woody Vine Stratum (Plot size:_____) greater than 3.28 ft (1m) tall.. 0.0% Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 0 0.0% 0 0.0% Woody vine - All woody vines greater than 3.28 ft in 0 0.0% height. = Total Cover Hydrophytic Vegetation No \bigcirc Yes 💿 Present? Remarks: (Include photo numbers here or on a separate sheet.)

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN4 Wet

Depth	•	Cribe to Matrix	ine depin	needed to document the	x Features	iirm the a	absence of indicators.)	
(inches)	Color (n		%	Color (moist)	% Type 1	Loc2	Texture	Remarks
0-6	10YR	3/2	100%				Loam	
6-10	2.5Y	4/1	100%				Fine Sandy Loam	
10+								Bedrock
							-	
								_
								_
Type: C=Con	centration. D=	=Depletic	n. RM=Red	uced Matrix, CS=Covered	or Coated Sand Grain	ns ² Loca	tion: PL=Pore Lining, M=	– Matrix
Hydric Soil I		- F		,				lematic Hydric Soils : 3
Histosol (Polyvalue Below S	Surface (S8) (LRR R,			(LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)				o (LRR K, L, MLRA 149B) lox (A16) (LRR K, L, R)
☐ Black Hist	tic (A3)				(S9) (LRR R, MLRA	149B)		t or Peat (S3) (LRR K, L, R)
Hydrogen	Sulfide (A4)				eral (F1) LRR K, L)		Dark Surface (S7	
	Layers (A5)			Loamy Gleyed Ma				Surface (S8) (LRR K, L)
✓ Depleted			(11)	Depleted Matrix (F			Thin Dark Surfac	e (S9) (LRR K, L)
	k Surface (A1	•		Depleted Dark Sur			Iron-Manganese	Masses (F12) (LRR K, L, R)
	ıck Mineral (S			Redox Depression			Piedmont Floodp	lain Soils (F19) (MLRA 149B)
Sandy Ge	eyed Matrix (S	4)						.6) (MLRA 144A, 145, 149B)
	Matrix (S6)						Red Parent Mate	
	ace (S7) (LRR	R, MLRA	A 149B)					rk Surface (TF12)
				and hydrology must be pres	aant unlaas disturba	d or proble	U Other (Explain in	Remarks)
			ni and wella	illa flyarology mast be pres	sent, unless disturbe	a or proble	ematic.	
Restrictive L	•	erved):						
Type: be							Hydric Soil Present?	Yes ● No ○
Depth (inc	nes):_10							
Remarks:								

Project/Site: Antrim Wind Project	City/County	y: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: AN4 Upland
Investigator(s): AF JG	Section	, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Ridgetop		(concave, convex, n		Slope: 0.0 % / 0.0 °
Subregion (LRR or MLRA):	Lat.:	Long	1.:	Datum:
			NWI classif	
Soil Map Unit Name:			— INVVI CIASSII	
Are climatic/hydrologic conditions on the site ty	pical for this time of year?	Yes No	(If no, explain in	*
Are Vegetation , Soil , or Hydrol	ogy significantly disturbed	? Are "Normal	Circumstances" p	oresent? Yes • No ·
Are Vegetation, Soil, or Hydrol	ogy naturally problematic?	(If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site	map showing sampling	point location	ıs, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No •			
Hydric Soil Present? Yes		the Sampled Area thin a Wetland?	Yes ○ No ●)
Wetland Hydrology Present? Yes	No •	ami a Wettana.		
Remarks: (Explain alternative procedures here	or in a congrato report)			
Hydrology				
Wetland Hydrology Indicators:			Secondary Indicato	ors (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)		Surface Soil C	•
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patte	erns (B10)
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lin	es (B16)
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres along Liv	ring Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)			ressed Plants (D1)
☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5)	Recent Iron Reduction in Tilled S	Soils (C6)	Geomorphic P	
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)		Shallow Aquita	ara (D3) phic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)		FAC-neutral To	
Field Observations: Surface Water Present? Yes No No	Depth (inches):			
Water Table Present? Yes No •				
	Depth (inches):	 Wetland Hydr	ology Present?	Yes ○ No ●
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):			
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previous	inspections), if avail	able:	
Remarks:				
iterial ks.				

VEGETATION - Use scientific names of p			minant ecies?		Sampling Point: AN4 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel	I.Strat.	Indicator Status	Dominance Test worksheet:
1 Ougrans ruhra	30	V	37.5%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
) Dinus strobus	25	V	31.3%	FACU	That are obt., thew, or the.
Pinus strobus Picea rubens	25	<u></u>	31.3%	FACU	Total Number of Dominant
· ·			0.0%	17100	Species Across All Strata: 7 (B)
		\Box	0.0%		Percent of dominant Species
). 		П	0.0%		That Are OBL, FACW, or FAC: 14.3% (A/B)
7		П	0.0%		Prevalence Index worksheet:
			tal Cove		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		= 10	tai cove	!	0BL species 0 x 1 = 0
. Betula papyrifera	5		10.0%	FACU	
Picea rubens	15	V	30.0%	FACU	
3. Vaccinium angustifolium	25	✓	50.0%	FACU-	FAC species 5 x 3 = 15 FACIL species 135 x 4 = 540
. Fagus grandifolia	5		10.0%	FACU	Thou species x +
5.			0.0%		UPL species $0 \times 5 = 0$
S	0		0.0%	-	Column Totals: 140 (A) 555 (B)
7.	0		0.0%	-	Prevalence Index = $B/A = 3.964$
		= To	tal Cove	r	
Herb Stratum (Plot size: 5')					Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation
1_Lycopodium obscurum	5	V _	50.0%	FACU	Dominance Test is > 50%
2. Ables balsamea	5	V _	50.0%	FAC	Prevalence Index is ≤ 3.0 ¹
3	0		0.0%		I =
4	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0		0.0%		
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
0.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diamete
1.	0		0.0%		at breast height (DBH), regardless of height.
2.	0		0.0%		
	10	= To	tal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)					groater than 6.26 it (iiii) tail
1		\sqcup	0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2			0.0%		size, and woody plants less than 3.28 ft tall.
3		\sqcup	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4			0.0%		height.
	0	= To	tal Cove	r	
					Hydrophytic
					Vegetation Present? Yes No •

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN4 Upland

Profile Description: (Des	cribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)			
	Matrix	_ 0, -	Redox Features	- T	Dama antos		
		<u>%</u>	Color (moist) % Type 1 Loc²	Texture	Remarks		
0-3 10YR	3/2	100%		Loam			
3-4 2.5Y	5/1	100%		Fine Sand			
4-12 10YR	4/6	100%		Sandy Loam			
12+					Ledge		
				-			
¹ Type: C=Concentration. D=	=Depletio	n. RM=Redu	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=I	 Matrix		
Hydric Soil Indicators:	•		<u>`</u>				
Histosol (A1)			Polyvalue Below Surface (S8) (LRR R,		lematic Hydric Soils: 3		
Histic Epipedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)		
Black Histic (A3)			☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)		
Hydrogen Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)		
Stratified Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	Surface (S8) (LRR K, L)		
Depleted Below Dark S	urface (A	11)	Depleted Matrix (F3)	Thin Dark Surface			
☐ Thick Dark Surface (A1	2)		Redox Dark Surface (F6)		Masses (F12) (LRR K, L, R)		
Sandy Muck Mineral (S	1)		Depleted Dark Surface (F7)	_	ain Soils (F19) (MLRA 149B)		
Sandy Gleyed Matrix (S	54)		Redox Depressions (F8)		6) (MLRA 144A, 145, 149B)		
Sandy Redox (S5)				Red Parent Mater			
Stripped Matrix (S6)				Very Shallow Dar			
Dark Surface (S7) (LRR	R, MLRA	149B)	Other (Explain in Remarks)				
³ Indicators of hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or probl		•		
Restrictive Layer (if obse							
Type: Ledge	si veu).						
Depth (inches): 12				Hydric Soil Present?	Yes O No 💿		
Remarks:							



AN4 Wetland



AN4 Upland

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: AN5 Wet
Investigator(s): AF JG	Sec	tion, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Ridgetop		elief (concave, convex, n		
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
Soil Map Unit Name:			-	cation: PFO
			_	
Are climatic/hydrologic conditions on the site	ypical for this time of year?	Yes ● No ○	(If no, explain in	
Are Vegetation , Soil , or Hydro	ology	bed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydro	ology naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)
Summary of Findings - Attach sit	<u> </u>	ing point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No O			
Hydric Soil Present? Yes O	No O	Is the Sampled Area within a Wetland?	Yes 💿 No 🔾	
Wetland Hydrology Present? Yes	No O			
Hydrology				
				())
Wetland Hydrology Indicators: Primary Indicators (minimum of one required	· check all that annly)			rs (minimum of 2 required)
Surface Water (A1)	✓ Water-Stained Leaves (B9)		Surface Soil Cr Drainage Patte	
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Line	
✓ Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
☐ Water Marks (B1)	Hydrogen Sulfide Odor (C1))	Crayfish Burro	ws (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres alon	g Living Roots (C3)	Saturation Visi	ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron ((C4)	Stunted or Stre	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in T	lled Soils (C6)	Geomorphic Po	
Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	
☐ Inundation Visible on Aerial Imagery (B7) ☐ Sparsely Vegetated Concave Surface (B8)	U Other (Explain in Remarks)		✓ Microtopograp ✓ FAC-neutral Te	
Field Observations:				
Surface Water Present? Yes No	Depth (inches):			
Water Table Present? Yes No No	Depth (inches):			Yes No
Saturation Present? Yes No O	Depth (inches):	Wetland Hydr	ology Present?	Yes ♥ NO ∪
Describe Recorded Data (stream gauge, moni Remarks: Sphagum carpet	toring well, aerial photos, previ	ous inspections), if avail	able:	

VEGETATION - Use scientific names of pl	ants		ominant		Sampling Point: AN5 Wet
(0)	Absolute	Re		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		over	Status	Number of Dominant Species
1. Acer rubrum	15	✓	100.0%	FAC	That are OBL, FACW, or FAC: 4 (A)
2	0		0.0%		Total Number of Dominant
3	0		0.0%		Species Across All Strata: 4 (B)
4	0_		0.0%		Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
6	0_		0.0%		
7		Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	15	= To	otal Cove	r	Total % Cover of: Multiply by:
1. Vaccinium corymbosum	25	~	62.5%	FACW-	0BL species 0 x 1 = 0
2. Picea mariana	5	\Box	12.5%	FACW-	FACW species $96 \times 2 = 192$
3. Spiraea latifolia	10	✓	25.0%	FAC+	FAC species 25 x 3 = 75
4.	0	\Box	0.0%		FACU speci es x 4 =0
5	0		0.0%		UPL species $0 \times 5 = 0$
6.	0	\Box	0.0%		Column Totals: 121 (A) 267 (B)
7	0	\Box	0.0%		Prevalence Index = B/A = 2.207
	40	 = To	otal Cove	r	
Herb Stratum (Plot size: 5')					Hydrophytic Vegetation Indicators:
1.Scirpus cyperinus	66	~	100.0%	FACW+	Rapid Test for Hydrophytic Vegetation
2.	0		0.0%		✓ Dominance Test is > 50%
3.	0		0.0%		✓ Prevalence Index is ≤3.0 ¹
4.	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12.	0		0.0%		Cooling (shorts - Was deadle to least the Coin BBH and
Woody Vine Stratum (Plot size:)	66	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2			0.0%		size, and woody plants less than 3.28 ft tall.
3			0.0%		Manda di nina Allamanda di nasa manatan than 2 00 ft i
4	0	\Box	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
••-					1 - 3

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

0 = Total Cover

Yes ● No ○

Hydrophytic Vegetation

Present?

Soil Sampling Point: AN5 Wet

	needed to document the indicator or confirm the	absence of indicators.)				
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type 1 Loc²	Touture Demontes				
Total (motor)	Color (moist) % Type 1 Loc2	Texture Remarks				
0-27 10YR 2/1		Peaty Muck bedrock				
27+						
1 Type: C. Concentration D. Donletion DM. Dod	used Matrix CS Covered or Coated Sand Crains 21 and	stion, DL Poro Lining M Matrix				
•	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	-				
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils: 3				
✓ Histosol (A1)	Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)				
Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)				
Black Histic (A3)	Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)				
☐ Hydrogen Sulfide (A4)		Dark Surface (S7) (LRR K, L)				
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Polyvalue Below Surface (S8) (LRR K, L)				
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	☐ Thin Dark Surface (S9) (LRR K, L)				
Thick Dark Surface (A12)	Redox Dark Surface (F6)	Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7)	Piedmont Floodplain Soils (F19) (MLRA 149B)				
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy Redox (S5)		Red Parent Material (TF2)				
Stripped Matrix (S6)		Very Shallow Dark Surface (TF12)				
Dark Surface (S7) (LRR R, MLRA 149B)		Other (Explain in Remarks)				
³ Indicators of hydrophytic vegetation and wetla	nd hydrology must be present, unless disturbed or proble					
	The Hydrology must be present, diffess distarbed of proble	indic.				
Restrictive Layer (if observed):						
Type: Bedrock		Hydric Soil Present? Yes ● No ○				
Depth (inches): 27		Hydric 30ii Fresent: Yes S NO				
Remarks:						

Project/Site: Antrim Wind Project			City/County:	Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable En	ergy, LLC			Sta	te: NH	Sampling Point: AN5 Upland
Investigator(s): AF JG			Section.	Township, Range:	S. T.	
	Ridgetop		_	concave, convex, r		
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					-	
Soil Map Unit Name:					NWI classifi	
Are climatic/hydrologic conditions on	the site ty	pical for this time of y	ear? Y	es No	(If no, explain in	· ·
Are Vegetation . , Soil .	, or Hydrolo	ogy 🗌 significant	ly disturbed?	Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation . , Soil .	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Att		<u> </u>	ampling p	ooint location	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •		0 1 10		
Hydric Soil Present?	Yes 🔾	No •		ne Sampled Area nin a Wetland?	Yes \bigcirc No $lacktriangle$	
Wetland Hydrology Present?	Yes 🔾	No 💿				
Hydrology						
Hydrology						
Wetland Hydrology Indicators:	roquirod	chack all that apply)				rs (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)	requireu,		(DO)		Surface Soil Cr Drainage Patte	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1	• •		Moss Trim Line	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		ig Roots (C3)		ble on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	ed Iron (C4)		Stunted or Stre	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	ction in Tilled Sc	oils (C6)	Geomorphic Po	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface		Other (Explain in F	Remarks)		✓ Microtopograp	
Sparsely vegetated concave surface	(B8)				FAC-neutral Te	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):	-	_		
Water Table Present? Yes	No 💿	Depth (inches):		_ ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No •	Depth (inches):		Wetland Hydi 	rology Present?	res O No O
Describe Recorded Data (stream gau	uge, monito	oring well, aerial photo	os, previous ir	nspections), if avai	lable:	
Remarks:						

/EGETATION - Use scientific names of p			ominant ecies?		Sa	mpling Po	int: AN	5 Upland	
Free Stratum (Plot size: 30')	Absolute % Cover	e Rel.Strat.		Indicator Status					
Picea rubens	33	V	39.8%	FACU	Number of Dominant That are OBL, FACW			1	(A)
Pinus strobus		~	60.2%	FACU			-		. ,
			0.0%		Total Number of Dor Species Across All St			6	(B)
			0.0%		Species Across Air St	iata.	-		(D)
			0.0%		Percent of domina			1/ 70/	(4.45)
	0		0.0%		That Are OBL, FAC	CW, or FA	C:	16.7%	(A/B
	0		0.0%		Prevalence Index v	vorksheet	:		
Gapling/Shrub Stratum (Plot size: 15')		= Tc	otal Cove	r	Total % Cov	er of:	Multiply	y by:	_
· • • • • • • • • • • • • • • • • • • •			400.00/	E4 0)4/	OBL species	0	x 1 =	0	
. Vaccinium corymbosum				FACW-	FACW species	5	x 2 =	10	_
<u>. </u>			0.0%		FAC species	0	x 3 =	0	
3			0.0%		FACU species	94	x 4 =	376	
ł	0		0.0%		UPL species	0	x 5 =	0	-
5.	0		0.0%		Column Totals:	99	(A)	386	- (B)
S	0		0.0%		Prevalence In			3.899	-
		 = To	otal Cove	r			-	3.099	
Herb Stratum (Plot size: 5')					Hydrophytic Veget			tation	
1. Gaultheria procumbens	3	V	27.3%	FACU	Dominance Te	•			
2. Vaccinium angustifolium	5	✓	45.5%	FACU-	Prevalence In				
3. Quercus rubra	3	✓	27.3%	FACU-				ovido cupr	ortina
4	0		0.0%			rks or on a	ons (Pr separate	ovide supp e sheet)	orung
5	0		0.0%		Problematic F	lydrophyt	ic Vegeta	tion ¹ (Exp	olain)
6	0		0.0%						
7	0		0.0%		Indicators of hy- be present, unless	dric soil a	nd wetlar	nd hydrolog	gy mus
8	0		0.0%						
9	0		0.0%		Definitions of Ve	egetatio	n Strata	:	
10	0		0.0%		Tree - Woody plan	ts, 3 in. (7	'.6 cm) oı	r more in d	liamete
l1 <u>. </u>	0		0.0%		at breast height (D	BH), rega	rdless of	height.	
12	0		0.0%		 Sapling/shrub - Wo	oody plant	e loce the	on 2 in DE	Ω∐ and
Woody Vine Stratum (Plot size:)	11	= To	otal Cove	r	greater than 3.28 f			ali 3 iii. DL	or i ariu
 1	0		0.0%		Herb - All herbace	ous (non-v	la (vboow	ants. rega	rdless
2		\Box	0.0%		size, and woody pl				
3		$\overline{\Box}$	0.0%		NA/ de - de - Allen				6 1.
4			0.0%		Woody vine - All w height.	oody vine	s greater	tnan 3.28	πın
1.		– To	otal Cove	r					
		-		-					
					Hydrophytic Vegetation Present? Yo	es O M	lo		

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN5 Upland

	•	the depth r	needed to document the indicator or confirm th	e absence of indicators.)	
Depth (inches)	Matrix Color (moist)	_ %	Redox Features Color (moist) % Type 1 Loc²	Texture	Remarks
0-4	10YR 3/3		20101 (110131) 70 1390 200	Loam	Romano
4-10	2.5Y 5/1			Fine Loamy Sand	
10-16	10YR 4/4			Fine Sandy Loam	
10 10	1011			Tine sandy Louin	
				_	
				_	
				_	
				_	
¹ Type: C=Conc	entration. D=Depletion	n. RM=Redu	ced Matrix, CS=Covered or Coated Sand Grains ² Lo	ocation: PL=Pore Lining. M=N	Matrix
Hydric Soil Ir	ndicators:		_	Indicators for Probl	ematic Hydric Soils: 3
Histosol (A			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)		(LRR K, L, MLRA 149B)
Histic Epip			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redo	ox (A16) (LRR K, L, R)
Black Histic	c (A3) Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
Stratified L			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
	Below Dark Surface (A1	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
☐ Thick Dark	Surface (A12)		Redox Dark Surface (F6)	Thin Dark Surface	Masses (F12) (LRR K, L, R)
☐ Sandy Muc	ck Mineral (S1)		Depleted Dark Surface (F7)		ain Soils (F19) (MLRA 149B)
_	yed Matrix (S4)		Redox Depressions (F8)		5) (MLRA 144A, 145, 149B)
Sandy Red				Red Parent Mater	ial (TF2)
Stripped M		1.40D)		Very Shallow Dark	
	ce (S7) (LRR R, MLRA			Other (Explain in	Remarks)
³ Indicators of	hydrophytic vegetation	and wetlan	d hydrology must be present, unless disturbed or pro	bblematic.	
Restrictive La	yer (if observed):				
Type:				Hydric Soil Present?	Yes ○ No •
Depth (inch	es):			1.94.10 00 1 1000	163 0 110 0
Remarks:					



AN5 Upland



AN5 Wetland

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: AN6 Wet
Investigator(s): AF JG	Sec.'	tion, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Hillside		elief (concave, convex, n		Slope: 0.0 % / 0.0 °
			-	
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
Soil Map Unit Name:			NWI classif	ication: PFO
Are climatic/hydrologic conditions on the site ty	pical for this time of year?	Yes No	(If no, explain in	
Are Vegetation . , Soil . , or Hydrole	ogy 🗌 significantly distur	bed? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrole	ogy naturally problema	ntic? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site	map showing sampli	ng point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No O			
Hydric Soil Present? Yes Yes	No O	Is the Sampled Area within a Wetland?	Yes ● No ○)
Wetland Hydrology Present? Yes ●	No O			
I hadrada arr				
Hydrology				
Wetland Hydrology Indicators:	chook all that apply)			ors (minimum of 2 required)
Primary Indicators (minimum of one required; Surface Water (A1)			Surface Soil C	
High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)		☐ Drainage Patte	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres along			ible on Aerial Imagery (C9)
☐ Drift deposits (B3)	Presence of Reduced Iron (-		essed Plants (D1)
☐ Algal Mat or Crust (B4)	Recent Iron Reduction in Til		✓ Geomorphic P	osition (D2)
Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	• •
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)		✓ Microtopograp	
Sparsely Vegetated Concave Surface (B8)			✓ FAC-neutral To	est (D5)
Field Observations:				
Surface Water Present? Yes No No	Depth (inches):			
Water Table Present? Yes No •	Depth (inches):			Yes ● No ○
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches):0	Wetland Hydr	ology Present?	res ⊕ No ∪
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previ	ous inspections), if avail	able:	
Remarks:				
sphagum carpet				
opriaga sarpst				

VEGETATION - Use scientific names of plan	nts		ominant pecies?		Sampling Point: AN6 Wet
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test worksheet:
1. Acer rubrum	25	V	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)
2. Betula alleghaniensis	25	V	50.0%	FAC	Mat a.e 652 Men 61 Men
3.	0		0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4.	0		0.0%		Species Across All Strata: 6 (B)
5.	0		0.0%		Percent of dominant Species
6.	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
7	0		0.0%		Prevalence Index worksheet:
	50	= To	otal Cove	r	Total % Cover of: Multiply by:
1 Vacatalum	20	~	36.4%	FACW-	0BL species 15 x 1 = 15
vaccinium corymbosum Acer rubrum	10		18.2%	FAC FAC	FACW speci es x 2 =
3. Picea mariana	25	✓	45.5%	FACW-	FAC species80x 3 =240
	0		0.0%	FACVV-	FACU species $0 \times 4 = 0$
4			0.0%		UPL species $0 \times 5 = 0$
5	0		0.0%		Column Totals: 206 (A) 477 (B)
6			0.0%		
7			otal Cove		Prevalence Index = B/A = 2.316
Herb Stratum (Plot size: 5')	55	= 10	otal Cove	1	Hydrophytic Vegetation Indicators:
1. Iris versicolor	15		14.9%	OBL	Rapid Test for Hydrophytic Vegetation
2.Coptis trifolia	33	✓	32.7%	FACW	✓ Dominance Test is > 50%
3. Cornus canadensis	20		19.8%	FAC-	Prevalence Index is ≤3.0 ¹
4.Osmunda cinnamomea	33	✓	32.7%	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12	0		0.0%		Carling/about Mandy plants loss than 2 in DDI and
Woody Vine Stratum (Plot size:)	101	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.
	0	= To	otal Cove	r	

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

Yes ● No ○

Hydrophytic Vegetation Present?

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN6 Wet

	ption: (Des		the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)	Color (r	Matrix noist)	- %	Redox Features Color (moist) % Type 1 Loc²	Texture	Remarks
0-4	10YR	3/2	100%		Loam	
4-8	2.5Y	4/1	100%		Sandy Loam	
8-9	2.5Y	6/1	100%		Loamy Sand	
	2.31		10070		Loanly Sand	Bedrock
9+						
					-	
					-	
						_
¹ Type: C=Conc	entration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=	Matrix
Hydric Soil Ir	ndicators:				Indicators for Prob	lematic Hydric Soils : 3
Histosol (A	1)			Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epipe				MLRA 149B) Thin Dark Surface (S9) (LRR R, MLRA 149B)	_	lox (A16) (LRR K, L, R)
☐ Black Histic				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
Stratified L	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7	
✓ Depleted B		Surface (A	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
_	Surface (A1		,	Redox Dark Surface (F6)		e (S9) (LRR K, L) Masses (F12) (LRR K, L, R)
Sandy Muc	k Mineral (S	51)		Depleted Dark Surface (F7)	_	lain Soils (F19) (MLRA 149B)
Sandy Gley	ed Matrix (S	S4)		Redox Depressions (F8)		.6) (MLRA 144A, 145, 149B)
Sandy Red					Red Parent Mate	
Stripped M			4.405)		Very Shallow Dar	k Surface (TF12)
	ce (S7) (LRF				Other (Explain in	Remarks)
³ Indicators of	hydrophytic	vegetatio	n and wetla	nd hydrology must be present, unless disturbed or prob	lematic.	
Restrictive La	yer (if obs	erved):				
Type: bed					Hydric Soil Present?	Yes ● No ○
Depth (inch	es):_9				nyunc son Present?	Yes S No C
Remarks:						

Project/Site: Antrim Wind Project	City	/County: Antrim		Sampling Date: 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LL	.C	Sta	te: NH	Sampling Point: AN6 Upland
Investigator(s): AF JG	S	Section, Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.): Hillside		I relief (concave, convex, r		Slope: 8.0 % / 4.6 °
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
Soil Map Unit Name:			NWI classif	ication:
Are climatic/hydrologic conditions on the si	te typical for this time of year?	Yes ● No ○	(If no, explain in	•
Are Vegetation . , Soil . , or Hy	drology 🗌 significantly dis	turbed? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation , Soil , or Hy	drology aturally proble	ematic? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Attach		pling point location	s, transects,	, important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes O No 🗨)
Wetland Hydrology Present? Yes	○ No •			
I hadrada ma				
Hydrology				
Wetland Hydrology Indicators:	rad, aback all that apply)			ors (minimum of 2 required)
Primary Indicators (minimum of one required Surface Water (A1)			Surface Soil C	
High Water Table (A2)	Water-Stained Leaves (E☐ Aquatic Fauna (B13)	39)	☐ Drainage Patte	
Saturation (A3)	Marl Deposits (B15)			Vater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres a	•		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iro	on (C4)	Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in	n Tilled Soils (C6)	Geomorphic P	Position (D2)
☐ Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remar	ks)		phic Relief (D4)
Sparsery vegetated concave surface (B8)			FAC-neutral T	est (D5)
Field Observations:				
Surface Water Present? Yes No	· · · · · -			
Water Table Present? Yes No	Depth (inches):	Wotland Hyde	rology Present?	Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	wetiana nyai	ology Present?	
Describe Recorded Data (stream gauge, m	onitoring well, aerial photos, pr	evious inspections), if avai	lable:	
Remarks:				
Remarks.				

VEGETATION - Use scientific names of	.		ominant pecies?		Sampling Point: AN6 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	
1. Quercus rubra	45	V	56.3%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Acer rubrum	25	V	31.3%	FAC	
Tsuga canadensis			12.5%	FACU	Total Number of Dominant Species Across All Strata: 7 (B)
·			0.0%		Species Across Air Strata.
j			0.0%		Percent of dominant Species
	0		0.0%		That Are OBL, FACW, or FAC: 28.6% (A/
			0.0%		Prevalence Index worksheet:
		= To	otal Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')					OBL species 0 x 1 = 0
. Fagus grandifolia		V	61.5%	FACU	FACW species $0 \times 2 = 0$
Picea rubens		✓	38.5%	FACU	FAC species $30 \times 3 = 90$
	0		0.0%		FACU speci es 73 x 4 = 292
·			0.0%		UPL species $\frac{5}{}$ x 5 = $\frac{25}{}$
·			0.0%		' /
S			0.0%		
7		Ш	0.0%		Prevalence Index = $B/A = 3.769$
Herb Stratum (Plot size: 5')	13	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1 Triantalla hansalla	F	~	22.20/	FAC	Rapid Test for Hydrophytic Vegetation
1.Trientalis borealis 2.Medeola virginiana			33.3%	FAC	☐ Dominance Test is > 50%
-			33.3%	UPL	Prevalence Index is ≤3.0 ¹
3. Vaccinium angustifolium	3		20.0%	FACU-	☐ Morphological Adaptations ¹ (Provide supporting
4.Aralia nudicaulis 5.	2		13.3%	FACU	data in Remarks or on a separate sheet)
6			0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7			0.0%		¹ Indicators of hydric soil and wetland hydrology mu
8.			0.0%		be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
0.			0.0%		
1.			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diame
2.			0.0%		at breast height (DBH), regardless of height.
۷		_	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH an
Noody Vine Stratum (Plot size:)	15	= Tc	otal Cove	r	greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless
2			0.0%		size, and woody plants less than 3.28 ft tall.
3			0.0%		Monday sing. All was always as a second of the control of the cont
4			0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
1.		 _ T	otal Cove		
		- 10	50VC	•	
					Hydrophytic
					Vegetation
					Present? Yes V NO V

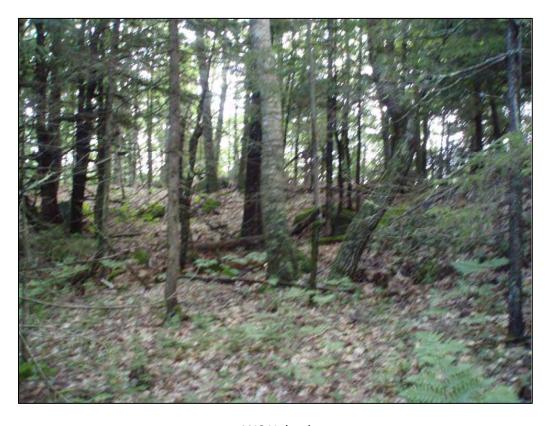
^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN6 Upland

	iption: (Des	cribe to	the depth	needed to document	the indic	ator or cor	nfirm the a	absence of indicators.)	
Depth (inches)		Matrix	_ 04	_	ox Featu			- Tt	Damada
	Color (n		%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR	3/2	100%					Loam	
4-6	2.5Y	5/1	100%					Sandy Loam	
6-15	10YR	4/6	100%					Sandy Loam	
¹ Type: C=Cone	centration. D:	=Depletio	n. RM=Red	duced Matrix, CS=Covere	d or Coate	ed Sand Grai	ins ² Loca	tion: PL=Pore Lining. M=Ma	trix
Hydric Soil I		<u>'</u>		<u> </u>				Indicators for Probler	•
Histosol (Polyvalue Belov	Surface ((S8) (LRR R.			natic riguite sons .
	pedon (A2)			MLRA 149B)		,			RR K, L, MLRA 149B)
Black Hist				☐ Thin Dark Surfa	ce (S9) (L	RR R, MLRA	A 149B)	Coast Prairie Redox	
	Sulfide (A4)			Loamy Mucky N	lineral (F1)) LRR K, L)		Dark Surface (S7) (Peat (S3) (LRR K, L, R)
_	Layers (A5)			Loamy Gleyed I	//atrix (F2)				face (S8) (LRR K, L)
Depleted	Below Dark S	urface (A	11)	Depleted Matrix				Thin Dark Surface (
☐ Thick Dar	k Surface (A1	2)		Redox Dark Sur					usses (F12) (LRR K, L, R)
Sandy Mu	ıck Mineral (S	1)		Depleted Dark		7)			n Soils (F19) (MLRA 149B)
Sandy Gle	eyed Matrix (S	54)		Redox Depressi	ons (F8)				(MLRA 144A, 145, 149B)
Sandy Re	dox (S5)							Red Parent Material	
Stripped M	Matrix (S6)							Very Shallow Dark S	
Dark Surfa	ace (S7) (LRR	R R, MLRA	149B)					Other (Explain in Re	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	and hydrology must be p	esent, un	less disturbe	ed or proble		,
				<u> </u>					
Restrictive La	ayer (ii obse	erveu):							
Depth (incl	has):							Hydric Soil Present?	Yes ○ No •
Remarks:									



AN6 Wetland



AN6 Upland

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 11-Aug-11
Applicant/Owner: Eolian Renewable Ener	rgy, LLC	s	tate: NH	Sampling Point: AN7 Wet
Investigator(s): AF JG		Section, Township, Range	e: S. T.	
Landform (hillslope, terrace, etc.): Ri	idgetop	Local relief (concave, convex		sy Slope: 0.0% / 0.0°
Subregion (LRR or MLRA):	Lat	_	ng.:	Datum:
			-	
Soil Map Unit Name:				ication: PFO
Are climatic/hydrologic conditions on t	the site typical for this time o	of year? Yes No	(If no, explain in	
Are Vegetation , Soil ,	or Hydrology Signification	antly disturbed? Are "Norm	al Circumstances" p	oresent? Yes No
Are Vegetation, Soil,	or Hydrology natural	ly problematic? (If needed	l, explain any answe	ers in Remarks.)
Summary of Findings - Atta		g sampling point location	ons, transects,	important features, etc.
' ' '	Yes No			
Hydric Soil Present?	Yes No	Is the Sampled Area within a Wetland?	Yes No)
Wetland Hydrology Present?	Yes ● No ○			
Hydrology				
Wetland Hydrology Indicators: Primary Indicators (minimum of one)	required; check all that apply	.Λ		ors (minimum of 2 required)
Surface Water (A1)			Surface Soil C Drainage Patte	
High Water Table (A2)	✓ Water-Stained☐ Aquatic Fauna	, ,	Moss Trim Lin	
Saturation (A3)	Marl Deposits (dater Table (C2)
Water Marks (B1)	Hydrogen Sulfi		Crayfish Burro	
Sediment Deposits (B2)		spheres along Living Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Re	educed Iron (C4)	Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Re	eduction in Tilled Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)	Thin Muck Surf	face (C7)	Shallow Aquita	
Inundation Visible on Aerial Imagery (Sparsely Vegetated Concave Surface (U Other (Explain	in Remarks)	✓ Microtopograp ✓ FAC-neutral To	
Sparsely vegetated concave surface ((88)		▼ FAC-neutral I	est (D5)
Field Observations:				
Surface Water Present? Yes	No Depth (inches	s):		
Water Table Present? Yes	No Oepth (inches	S):	drology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe)	No Depth (inches	s):		
Describe Recorded Data (stream gaug	ge, monitoring well, aerial ph	notos, previous inspections), if av	ailable:	
Remarks:				

VEGETATION - Use scientific names of pla	ınts		ominant		Sampling Point: AN7 Wet
- (Dietsies 20)	Absolute	R	el.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'	% Cover		over	Status	Number of Dominant Species
1. Acer rubrum	25	✓		FAC	That are OBL, FACW, or FAC: 3 (A)
2			0.0%		Total Number of Dominant
3			0.0%		Species Across All Strata: 4 (B)
4			0.0%		Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC: 75.0% (A/B)
6			0.0%		
7		Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	25	= To	otal Cove	r	Total % Cover of: Multiply by:
1. Vaccinium corymbosum	50	~	33.1%	FACW-	0BL species 0 x 1 = 0
2. Acer rubrum	25	\Box	16.6%	FAC	FACW species $116 \times 2 = 232$
3. Spiraea latifolia	10	\Box	6.6%	FAC+	FAC species $\phantom{00000000000000000000000000000000000$
4.			43.7%		FACU speci es0 x 4 =0
5	0		0.0%		UPL species x 5 =0
6.	0		0.0%		Column Totals: 176 (A) 412 (B)
7.	0	\Box	0.0%		Prevalence Index = B/A = 2.341
			otal Cove		
Herb Stratum (Plot size: 5')			otal ooto		Hydrophytic Vegetation Indicators:
1.Osmunda cinnamomea	66	✓	100.0%	FACW	Rapid Test for Hydrophytic Vegetation
2.	0		0.0%		✓ Dominance Test is > 50%
3.	0		0.0%		Prevalence Index is ≤3.0 ¹
4.	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0		0.0%		at breast height (DBH), regardless of height.
12.	0		0.0%		
	66	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)		_			3.53.5. Hall 5.25 it (111) tall.
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
Ι Λ	0		0.0%		height.

0 = Total Cover

Hydrophytic Vegetation Present?

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

Yes ● No ○

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN7 Wet

	iption: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)	
Depth (inches)	" Color (Matrix	_ 0,	Redox Features Color (moist) % Type 1 Loc²	Tavtuma	Domoniko
	Color (ı		100%	Color (moist) % Type 1 Loc2	Texture	Remarks
0-6	10YR	3/2	100%		Loam	
6-7	2.5Y	5/1	100%		Fine Loamy Sand	
7-9	2.5Y	4/2	100%		Very Fine Sandy Loam	-
9+						bedrock
					-	
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=I	Matrix
Hydric Soil I	ndicators:				Indicators for Prob	lematic Hydric Soils: 3
Histosol (•			Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
	pedon (A2)			MLRA 149B) Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
Black Hist				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Layers (A5) Below Dark S	Surface (A:	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
	k Surface (A1		11)	Redox Dark Surface (F6)		e (S9) (LRR K, L)
	ick Mineral (S	•		☐ Depleted Dark Surface (F7)		Masses (F12) (LRR K, L, R)
	eyed Matrix (Redox Depressions (F8)		ain Soils (F19) (MLRA 149B)
Sandy Re		,			Red Parent Mater	6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Very Shallow Dar	
Dark Surf	ace (S7) (LRI	R R, MLRA	149B)		Other (Explain in	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble		,
Restrictive L						
Type: _be	•	or vou).				
Depth (inc					Hydric Soil Present?	Yes No
Remarks:	<u> </u>					
rtomarto.						

Project/Site: Antrim Wind Project			City/Count	y: Antrim		Sampling Date: 11-Aug-11
Applicant/Owner: Eolian Renewable Ene	ergy, LLC			Sta	te: NH	Sampling Point: AN7 Upland
Investigator(s): AF JG			Section	, Township, Range:	S. T.	
	Ridgetop		_	(concave, convex, r		Slope: 12.5 % / 7.1°
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
Soil Map Unit Name:					NWI classif	
Are climatic/hydrologic conditions on	the site typ	pical for this time of y	ear?	Yes No	(If no, explain in	*
Are Vegetation . , Soil . ,	or Hydrolo	ogy 🗌 significant	ly disturbed	I? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil,	or Hydrolo	ogy 🗌 naturally p	oroblematic	? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Atta		<u> </u>	ampling	point location	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •				
Hydric Soil Present?		No •		the Sampled Area thin a Wetland?	Yes \bigcirc No $lacktriangle$)
Wetland Hydrology Present?	Yes 🔾	No •				
I hadrada ma						
Hydrology						
Wetland Hydrology Indicators:	roguirod.	abaak all that annly)				ors (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)	required; ((0.0)		Surface Soil C	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		ving Roots (C3)		ible on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduc	-		Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	ction in Tilled	Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery		Other (Explain in F	Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface	(B8)				FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes	No 💿	Depth (inches):				
Water Table Present? Yes	No 💿	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No •	Depth (inches):		Wetland Hydi	rology Present?	Yes Uno U
Describe Recorded Data (stream gau	ge, monito	oring well, aerial photo	os, previous	inspections), if avai	lable:	
Remarks:						

Absolute Rel. % Cover Co	20.5% 45.2% 34.2% 0.0% 0.0% 0.0% 0.0% al Cover 76.7% 23.3% 0.0% 0.0% 0.0% 14.3% 14.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by: OBL species Ox1 = O FACW species Ox2 = O FAC species 121 x 4 = 484 UPL species Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
1. Betula papyrifera 2. Quercus rubra 3. Acer rubrum 4.	20.5% 45.2% 34.2% 0.0% 0.0% 0.0% 0.0% al Cover 76.7% 0.0% 0.0% 0.0% 14.3% 14.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU FACU	That are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 6 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 121 x 4 = 484 UPL species 151 (A) 1584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Quercus rubra 3. Acer rubrum 4.	45.2% 34.2% 0.0% 0.0% 0.0% 0.0% al Cover 76.7% 0.0% 0.0% 0.0% 14.3% 14.3% 14.3% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU FACU	Total Number of Dominant Species Across All Strata: Percent of dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by: OBL species O FACW species O FAC species 121 FACU species 121 VA 4 = 484 UPL species Col umn Total s: 151 Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3. Acer rubrum	34.2% 0.0% 0.0% 0.0% 0.0% al Cover 76.7% 23.3% 0.0% 0.0% 0.0% 14.3% 14.3% 14.3% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU	Percent of dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by:
	0.0% 0.0% 0.0% 0.0% 0.0% al Cover 76.7% 0.0% 0.0% 0.0% 0.0% 14.3% 14.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU	Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% 16.7%
5	0.0% 0.0% 0.0% 0.0% al Cover 76.7% 23.3% 0.0% 0.0% 0.0% 14.3% 14.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU- FACU	That Are OBL, FACW, or FAC: 16.7%
Sapling/Shrub Stratum (Plot size: 15')	0.0% 0.0% al Cover 76.7% 23.3% 0.0% 0.0% 0.0% 0.0% 14.3% 14.3% 0.0% 0.0% 0.0%	FACU FACU FACU FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 25 x 3 = 75 FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Sapling/Shrub Stratum (Plot size: 15' 73	0.0% al Cover 76.7% 23.3% 0.0% 0.0% 0.0% 0.0% 14.3% 14.3% 14.3% 0.0% 0.0% 0.0%	FACU FACU FACU FACU	Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 25 x 3 = 75 FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Sapling/Shrub Stratum (Plot size: 15')	76.7% 23.3% 0.0% 0.0% 0.0% 0.0% 414.3% 14.3% 0.0% 0.0% 0.0%	FACU FACU FACU FACU	Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 25 x 3 = 75 FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
. Fagus grandifolia 33 ✓ 2. Picea rubens 10 ✓ 3. 0 □ 4. 0 □ 5. 0 □ 6. 0 □ 7. 0 □ 8. 0 □ 9. 0 □ 1. 0 □ 2. 0 □ Moody Vine Stratum (Plot size:) □ 1. 0 □ 2. 0 □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □ 0 □ □	23.3% 0.0% 0.0% 0.0% 0.0% 0.0% al Cover 71.4% 14.3% 0.0% 0.0% 0.0%	FACU-FACU	FACW species 0 x 2 = 0 FAC species 25 x 3 = 75 FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Picea rubens	23.3% 0.0% 0.0% 0.0% 0.0% 0.0% al Cover 71.4% 14.3% 0.0% 0.0% 0.0%	FACU-FACU	FAC species 25 x 3 = 75 FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1.	0.0% 0.0% 0.0% 0.0% 0.0% al Cover 71.4% 14.3% 0.0% 0.0% 0.0%	FACU- FACU	FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
	0.0% 0.0% 0.0% 0.0% al Cover 71.4% 14.3% 14.3% 0.0% 0.0%	FACU-	FACU species 121 x 4 = 484 UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Solution Solution	0.0% 0.0% 0.0% al Cover 71.4% 14.3% 14.3% 0.0% 0.0%	FACU-	UPL species 5 x 5 = 25 Col umn Total s: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Solution Solution	0.0% 0.0% al Cover 71.4% 14.3% 0.0% 0.0%	FACU-	Col umn Total s:151 (A)584 (B) Prevalence Index = B/A =3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1.	0.0% al Cover 71.4% 14.3% 0.0% 0.0% 0.0%	FACU-	Prevalence Index = B/A = 3.868 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1. Vaccinium angustifolium 25 Vaccinium angustifolium 25 Vaccinium angustifolium 25 Vaccinium angustifolium 25 Vaccinium angustifolium 5 Vaccinium obscurum 6 Vaccinium obscurum 6 Vaccinium obscurum 7 Vaccinium obscurum obscurum 7 Vaccinium obscurum 7 Vaccinium obscurum obscurum 7 Vaccinium obscurum obscuru	71.4% 14.3% 14.3% 0.0% 0.0%	FACU-	Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1. Vaccinium angustifolium 25	71.4% 14.3% 14.3% 0.0% 0.0%	FACU-	Rapid Test for Hydrophytic Vegetation Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Lycopodium obscurum 5 3. Polygonatum pubescens 5 4. 0 5. 0 6. 0 7. 0 8. 0 9. 0 0. 0 1. 0 2. 0 Moody Vine Stratum (Plot size:) 1. 0 2. 0	14.3% 14.3% 0.0% 0.0% 0.0%	FACU	 Dominance Test is > 50% Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Lycopodium obscurum 5 3. Polygonatum pubescens 5 4. 0 5. 0 6. 0 7. 0 8. 0 9. 0 0. 0 1. 0 2. 0 Moody Vine Stratum (Plot size:) 1. 0 2. 0	14.3% 14.3% 0.0% 0.0% 0.0%	FACU	 Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3. Polygonatum pubescens 4.	14.3% 0.0% 0.0% 0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4.	0.0% 0.0% 0.0%		data in Remarks or on a separate sheet)
5.	0.0%		
6.			Problematic Hydrophytic Vegetation (Explain)
8.			
9.	0.0%		¹ Indicators of hydric soil and wetland hydrology mus
0.	0.0%		be present, unless disturbed or problematic.
1.	0.0%		Definitions of Vegetation Strata:
2.	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diamete
35 = Total	0.0%		at breast height (DBH), regardless of height.
Woody Vine Stratum (Plot size:)	0.0%		Continue to the Manufacture to the Circ BBH and
1	al Cover		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
2			
	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
	0.0%		Size, and woody plants less than 3.20 it tall.
3	0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0.0%		height.
0 = Tota	al Cover		
			Lludrophytic
			Hydrophytic
			Vegetation Present? Yes ○ No ●

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN7 Upland

	ription: (Des	cribe to t	he depth	needed to document	the indicator or con	firm the a	bsence of indicators.)	
Depth (inches)	. Color (m	Matrix	- %	Red Color (moist)	ox Features % Type 1	Loc2	Texture	Remarks
0-2	10YR	3/2		Color (moist)		LUC-	Loam	Remarks
2-4	2.5YR	5/1					Fine Loamy Sand	
4-9	10YR	4/4					Fine Sandy Loam	bedrock
9+								
							-	
							-	
7 .		=Depletion	ı. RM=Redı	uced Matrix, CS=Covere	d or Coated Sand Grai	ns ² Locat	tion: PL=Pore Lining. M=N	Matrix
Hydric Soil I							Indicators for Prob	lematic Hydric Soils : 3
Histosol (☐ Polyvalue Below MLRA 149B)	Surface (S8) (LRR R,		2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	pedon (A2)				ce (S9) (LRR R, MLRA	149B)	Coast Prairie Red	ox (A16) (LRR K, L, R)
Black Hist	nc (A3) n Sulfide (A4)				lineral (F1) LRR K, L)	,		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed N			Dark Surface (S7)	
	Below Dark Si	urface (A1	1)	Depleted Matrix	(F3)			Surface (S8) (LRR K, L)
_	k Surface (A1:		,	Redox Dark Sur	face (F6)		Thin Dark Surface	e (S9) (LRR K, L) Masses (F12) (LRR K, L, R)
Sandy Mu	uck Mineral (S´	1)		Depleted Dark S				ain Soils (F19) (MLRA 149B)
Sandy Gle	eyed Matrix (S	54)		Redox Depression	ons (F8)			6) (MLRA 144A, 145, 149B)
Sandy Re	dox (S5)						Red Parent Mater	
	Matrix (S6)						Very Shallow Dar	
Dark Surf	ace (S7) (LRR	R, MLRA	149B)				Other (Explain in	Remarks)
³ Indicators of	f hydrophytic	vegetation	and wetla	nd hydrology must be pr	esent, unless disturbe	d or proble	ematic.	
Restrictive L	ayer (if obse	erved):						
Type: _be	edrock							
Depth (inc	hes): 9						Hydric Soil Present?	Yes O No 💿
Remarks:							I.	



AN7 Wetland



AN7 Upland

Project/Site: Antrim Wind Project			City/Count	y : Antrim		Sampling Date: 11-	Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	te: NH	Sampling Point:	AN8 Wet
Investigator(s): AF JG			Section	, Township, Range:	S. T.	 R.	
Landform (hillslope, terrace, etc.):	Terrace		_	(concave, convex, n		Slope:	5.0 % / 2.9 °
Subregion (LRR or MLRA):	Torrado				-		
		Lat.:	-	Long	-	Datur	n:
Soil Map Unit Name:					NWI classif	ication: PFO	
Are climatic/hydrologic conditions o	n the site typ	pical for this time of y	ear?	Yes ● No ○	(If no, explain in	•	
Are Vegetation, Soil	, or Hydrolo	ogy 🗌 significant	lly disturbed	? Are "Normal	Circumstances" p	oresent? Yes •	No O
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	oroblematic?	? (If needed, e	explain any answe	ers in Remarks.)	
Summary of Findings - At	tach site	map showing s	sampling				tures, etc.
Hydrophytic Vegetation Present?		No O					
Hydric Soil Present?	Yes 💿	No O		the Sampled Area thin a Wetland?	Yes ● No ○)	
Wetland Hydrology Present?	Yes 💿	No O					
Lludrology							
Hydrology							
Wetland Hydrology Indicators:						ors (minimum of 2 requi	red)
Primary Indicators (minimum of or	ie requirea; o				Surface Soil Ci		
Surface Water (A1) High Water Table (A2)		✓ Water-Stained Lea☐ Aquatic Fauna (B1			✓ Drainage Patte Moss Trim Lin		
Saturation (A3)		Marl Deposits (B1				es (B16) 'ater Table (C2)	
Water Marks (B1)		Hydrogen Sulfide			Crayfish Burro		
Sediment Deposits (B2)		Oxidized Rhizosph		vina Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	-	ing Roots (00)		essed Plants (D1)	07,
Algal Mat or Crust (B4)		Recent Iron Reduc		Soils (C6)	Geomorphic P	` ,	
☐ Iron Deposits (B5)		☐ Thin Muck Surface			Shallow Aquita	• •	
Inundation Visible on Aerial Imager	y (B7)	Other (Explain in F	` '		Microtopograp	phic Relief (D4)	
Sparsely Vegetated Concave Surface	e (B8)				FAC-neutral To	est (D5)	
Field Observations:							
Surface Water Present? Yes		Depth (inches):					
Water Table Present? Yes	No ●	Depth (inches):				Yes ● No ○	
Saturation Present? (includes capillary fringe) Yes	No 🔾	Depth (inches):	0	Wetland Hydr	ology Present?	Yes ♥ No ∪	
Describe Recorded Data (stream ga	auge, monito	ring well, aerial photo	os, previous	inspections), if avail	able:		
Remarks:							

		Sne	ecies?						
ee Stratum (Plot size: 30')	Absolute % Cover	Rel	.Strat.	Indicator Status	Dominance Test wo	orksheet:			
Betula alleghaniensis	25	V	50.0%	FAC	Number of Dominant That are OBL, FACW,			5	(A)
A oor rubrum	25	<u> </u>	50.0%	FAC	That are OBL, FACW,	UI FAC.	_		(A)
			0.0%	TAO	Total Number of Dom			-	
		\Box	0.0%		Species Across All Str	ata:	_	5	(B)
		Π-	0.0%		Percent of dominar	nt Specie:	S		
		П	0.0%		That Are OBL, FAC	W, or FA	C:1	00.0%	(A/B)
		П	0.0%		Prevalence Index w	orkshoot	•		
		 _ Tot	tal Cove	-	Total % Cove		Multiply	hv.	
pling/Shrub Stratum (Plot size: 15')		_ 10	iai cove		OBL species	0	x 1 =	0	_
Vaccinium corymbosum	5	✓ _	23.8%	FACW-	FACW species	91		182	-
Spiraea latifolia	10	_ _	47.6%	FAC+	l '	63		189	-
Picea rubens	3		14.3%	FACU	FAC species	3		12	-
Betula alleghaniensis			14.3%	FAC	l '	0		0	-
	0		0.0%		UPL species		x 5 =		- (5)
	0		0.0%		Column Totals:	157	(A)	383	(B)
	0		0.0%		Prevalence Inc	dex = B/A	A =	2.439	
rb Stratum (Plot size: 5')		= Tot	tal Cove	r	Hydrophytic Vegeta	tion Indi	cators:		
	7.5	~	00.40/	E4.014/	Rapid Test for	Hydrophy	ytic Vegeta	ation	
Impatiens capensis			82.4%	FACW	✓ Dominance Te	st is > 50)%		
Osmunda cinnamomea	5		5.5%	FACW	✓ Prevalence In	dex is ≤3	.0 ¹		
Onoclea sensibilis			3.3%	FACW	Morphological	Adaptati	ions ¹ (Pro	vide supp	orting
.Carex Intumescens		_	3.3%	FACW+	data in Remar		-		
.violet spp.		Н-	5.5%		Problematic H	ydrophyt	ic Vegetati	on ¹ (Exp	olain)
	0	Н-	0.0%		¹ Indicators of hyd	lric soil a	nd wetland	l bydrolo	av must
	0	Н-	0.0%		be present, unless	disturbed	d or proble	matic.	gy must
	0	Н-	0.0%		Definitions of Ve	getatio	n Strata:		
<u>. </u>		<u> </u>	0.0%						
<u>. </u>		<u> </u>	0.0%		Tree - Woody plant at breast height (DI				liamete
		<u> </u>	0.0%		at breast neight (Di	ווכ, rega	11 663 H	ieigiit.	
		 ·- -						n 3 in. DE	3H and
pody Vine Stratum (Plot size:)		= 101	tai Cove	r	greater than 3.28 ft	(1m) tall			
	0		0.0%		Herb - All herbaced	ous (non-v	woodv) pla	nts. rega	rdless o
			0.0%						
	0		0.0%		Woody vino All	andy vina	o arootor t	han 2 20	ft in
	0		0.0%		height.	Jouy VINE	s greater t	.⊓aп 3.∠8	11 111
		_ = Tot	tal Cove	 r	, and the second				
pody Vine Stratum (Plot size:)	0 0 0		0.0% 0.0% 0.0%			greater than 3.28 ft Herb - All herbaced size, and woody pla Woody vine - All was height. Hydrophytic	greater than 3.28 ft (1m) tall Herb - All herbaceous (nonsize, and woody plants less Woody vine - All woody vine height. Hydrophytic	greater than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plasize, and woody plants less than 3.28 Woody vine - All woody vines greater theight.	Herb - All herbaceous (non-woody) plants, rega size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 height. Hydrophytic

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN8 Wet

	iption: (Des	scribe to	the depth	needed to d	ocument	the indic	ator or co	onfirm the	absence of indicators.)		
Depth (inches)	. Color (ı	Matrix	_ %	_ Color (r		dox Featu ~~%		Loc²	Texture	Remarks	
				COIOI (I	iloist)	70	- Type	LUC-		Remarks	—
0-8	2.5YR	2/1	100%						Loam		
8-10	2.5Y	5/1	100%						Fine Sand		
10-20	2.5Y	4/2	95%	2.5Y	6/1	5%	D	M	Sandy Loam		
									-		
									-		_
									-		_
									-		_
							-				_
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, C	S=Covere	d or Coate	d Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=N	Matrix	
Hydric Soil I	ndicators:								Indicators for Probl	ematic Hydric Soils: 3	
Histosol (A1)					v Surface (S8) (LRR F	R ,		(LRR K, L, MLRA 149B)	
	oedon (A2)				149B)	(CO) (I	DD D MI	0A 140D)		ox (A16) (LRR K, L, R)	
Black Hist						ice (S9) (L Nineral (F1)			_	or Peat (S3) (LRR K, L, R)	
	Sulfide (A4)					Matrix (F2)			Dark Surface (S7)	(LRR K, L)	
	Layers (A5) Below Dark S	Surface (A:	11\	_	ted Matrix					Surface (S8) (LRR K, L)	
	k Surface (A1		11)		x Dark Sur				Thin Dark Surface		
	ick Mineral (S	•		☐ Deple	ted Dark	Surface (F7	7)			Masses (F12) (LRR K, L, R)	
	eyed Matrix (Redo	x Depressi	ions (F8)				ain Soils (F19) (MLRA 149B)	
Sandy Re		<i>-</i> .,							Red Parent Materi	6) (MLRA 144A, 145, 149B)	
	Matrix (S6)								☐ Very Shallow Dark		
	ace (S7) (LRI	R R, MLRA	149B)						Other (Explain in I		
³ Indicators of	f hydrophytic	vegetatio	n and wetla	and hydrology	must be p	resent. unl	less disturt	ned or proble		nomarko)	
Restrictive La	ayer (II obs	ervea):									
Depth (incl	hes).								Hydric Soil Present?	Yes No	
Remarks:											

Project/Site: Antrim Wind Project	Ci	ty/County: Antrim		Sampling Date: 11-Aug-11
Applicant/Owner: Eolian Renewable Energy, L	LC	Sta	te: NH	Sampling Point: AN8 Upland
Investigator(s): AF JG		Section, Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.): Terrac	ce Lo	ocal relief (concave, convex, n		Slope: 7.0 % / 4.0 °
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
			NWI classif	
Soil Map Unit Name:			— INVVI CIASSII	
Are climatic/hydrologic conditions on the s	ite typical for this time of year	·? Yes ● No ○	(If no, explain in	· · · · · · · · · · · · · · · · · · ·
Are Vegetation \square , Soil \square , or H	ydrology 🗌 significantly	disturbed? Are "Normal	Circumstances" p	oresent? Yes • No •
Are Vegetation, Soil, or H	ydrology naturally pro	blematic? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Attach		mpling point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes O No 🗨)
Wetland Hydrology Present? Yes	○ No •			
I hadrada an				
Hydrology				
Wetland Hydrology Indicators:	irod, about all that apply)			ors (minimum of 2 required)
Primary Indicators (minimum of one requ Surface Water (A1)		(DO)	Surface Soil C	
High Water Table (A2)	Water-Stained Leaves☐ Aquatic Fauna (B13)	S (B9)	☐ Drainage Patte ☐ Moss Trim Lin	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odd	or (C1)	Crayfish Burro	
Sediment Deposits (B2)	_ , ,	s along Living Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced	Iron (C4)	Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reductio	n in Tilled Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)	Thin Muck Surface (C	7)	Shallow Aquita	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	Other (Explain in Ren	narks)		phic Relief (D4)
Sparsely vegetated concave surface (B8)			FAC-neutral T	est (D5)
Field Observations:				
	Depth (inches):			
	Depth (inches):	Wotland Hyde	ology Present?	Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	wetiana nyai	ology Present?	Tes C NO C
Describe Recorded Data (stream gauge, n	nonitoring well, aerial photos,	previous inspections), if avail	able:	
Remarks:				
Remarks:				

/EGETATION - Use scientific names of p	· · · · · · · · · · · · · · · · · · ·		Species?				Sampling Point: AN8 Upland				
Free Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test w						
Quercus rubra	25	V	28.4%	FACU-	Number of Dominant That are OBL, FACW			1	(A)		
Pinus strobus	22	V	37.5%	FACU			,		. ,		
Betula papyrifera			11.4%	FACU	Total Number of Dor Species Across All St			6	(B)		
Acer rubrum	00	~	22.7%	FAC	Species Across Air St	rata.			(D)		
5.			0.0%		Percent of domina			1/ 70/	(A (D)		
5.			0.0%		That Are OBL, FAC	CW, or FA	C:	16.7%	(A/B)		
7.	0		0.0%		Prevalence Index v	vorksheet	:				
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cove	er	Total % Cov	er of:	Multipl	y by:	_		
. Fagus grandifolia	40	~	80.0%	FACU	OBL species	0	x 1 =	0	-		
Diego rubono		✓	20.0%	FACU	FACW species	0	x 2 =	0	-		
			0.0%	TAGO	FAC species	20	x 3 =	60			
3			0.0%		FACU speci es	119	x 4 =	476	-		
4 5			0.0%		UPL species	26	x 5 =	130	-		
5.			0.0%		Column Totals:	165	(A)	666	(B)		
7			0.0%		Prevalence In	dex = B/A	. =	4.036	_		
		= Tc	tal Cove	er							
Herb Stratum (Plot size: 5'					Hydrophytic Veget Rapid Test for			tation			
1 .Aralia nudicaulis	1		3.7%	FACU	Dominance To			tation			
2.Medeola virginiana	1		3.7%	UPL	Prevalence In						
3.Polygonatum pubescens	25	✓	92.6%	UPL							
4	0		0.0%		Morphologica data in Rema	i Adaptati rks or on a	ons - (Pr separat	oviae supp e sheet)	orting		
5	0		0.0%		Problematic F	lydrophyti	c Vegeta	tion ¹ (Exp	olain)		
6	0		0.0%								
7	0		0.0%		Indicators of hybe present, unless	dric soil a	nd wetlar	nd hydrolog	gy mus		
8	0	Ш	0.0%				-				
9.	0	Ш	0.0%		Definitions of Vo	egetatioi	1 Strata	:			
10	0		0.0%		Tree - Woody plan				liamete		
11	0		0.0%		at breast height (D	BH), rega	rdless of	height.			
12	0	Ш	0.0%		Sapling/shrub - Wo	oody plant	s less th	an 3 in DF	RH and		
Woody Vine Stratum (Plot size:)	27	= To	otal Cove	er	greater than 3.28 f			un 0 m. D2	, r and		
 1	0		0.0%		Herb - All herbace				rdless		
2			0.0%		size, and woody pl	ants less	than 3.28	3 ft tall.			
3			0.0%		Woody vine - All w	oody vine	s areatei	than 3 28	ft in		
4			0.0%		height.	oody viiic	3 greater	11111 5.20			
•		= Tc	tal Cove	er							
					Hydrophytic						
					Vegetation	es O	lo •				

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN8 Upland

Profile Description: (Describ	e to the depth r	eeded to document the indicator or confirm the	absence of indicators.)	
	trix	Redox Features	- +	5
	<u> </u>	Color (moist) % Type 1 Loc²	Texture	Remarks
0-4 10YR 3	3/2 100%		Loam	
4-6 2.5Y 5	5/1 100%		Loamy Sand	
6-8 10YR 4	1/4 100%		Very Fine Sandy Loam	
8+				Bedrock
			- ·	
¹ Type: C=Concentration. D=De	pletion. RM=Redu	ced Matrix, CS=Covered or Coated Sand Grains 2Loc	cation: PL=Pore Lining. M=M	atrix
Hydric Soil Indicators:			Indicators for Proble	ematic Hydric Soils : 3
Histosol (A1)		Polyvalue Below Surface (S8) (LRR R,		(LRR K, L, MLRA 149B)
Histic Epipedon (A2)		MLRA 149B)		x (A16) (LRR K, L, R)
☐ Black Histic (A3)		☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4)		Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)	
Stratified Layers (A5)		Loamy Gleyed Matrix (F2)		urface (S8) (LRR K, L)
Depleted Below Dark Surfa	ce (A11)	Depleted Matrix (F3)	Thin Dark Surface	
☐ Thick Dark Surface (A12)		Redox Dark Surface (F6)		lasses (F12) (LRR K, L, R)
Sandy Muck Mineral (S1)		Depleted Dark Surface (F7)		in Soils (F19) (MLRA 149B)
Sandy Gleyed Matrix (S4)		Redox Depressions (F8)) (MLRA 144A, 145, 149B)
Sandy Redox (S5)			Red Parent Materia	
Stripped Matrix (S6)			Very Shallow Dark	
Dark Surface (S7) (LRR R,	MLRA 149B)		Other (Explain in F	
³ Indicators of hydrophytic year	etation and wetlan	d hydrology must be present, unless disturbed or prob		·
Restrictive Layer (if observe Type: Bedrock	·u).			
Depth (inches): 8			Hydric Soil Present?	Yes ○ No ●
Remarks:				



AN8 Upland



AN8 Wetland



AN8 Wetland

Project/Site: Antrim Wind Project	City/County: Antrim Sampling Date: 11-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC	State: NH Sampling Point: AN10 Wet
Investigator(s): AF JG	Section, Township, Range: S. T. R.
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, none): none Slope: 10.0 % / 5.7 °
	
Subregion (LRR or MLRA):	Lat.: Long.: Datum:
Soil Map Unit Name:	NWI classification: PFO
Are climatic/hydrologic conditions on the site typical for this	
Are Vegetation \square , Soil \square , or Hydrology \square s	ignificantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation . , Soil . , or Hydrology . r	aturally problematic? (If needed, explain any answers in Remarks.)
Summary of Findings - Attach site map sho	owing 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 ○	
Hydrology	
Wetland Hydrology Indicators:	Cocondon: Indicators (minimum of 2 required)
Primary Indicators (minimum of one required; check all that	t apply) Secondary Indicators (minimum of 2 required) Surface Soil Cracks (B6)
	Stained Leaves (B9) Stained Leaves (B9) Drainage Patterns (B10)
	Fauna (B13)
	posits (B15) Dry Season Water Table (C2)
Water Marks (B1) Hydrog	en Sulfide Odor (C1) Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidize	d Rhizospheres along Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
	e of Reduced Iron (C4) Stunted or Stressed Plants (D1)
	Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)
	ick Surface (C7) Shallow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (☐ Sparsely Vegetated Concave Surface (B8)	Explain in Remarks) Microtopographic Relief (D4) FAC-neutral Test (D5)
Sparsery vegetated concave surface (bo)	FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes No Depth	(instant)
<u> </u>	(inches):1
	(inches): Wetland Hydrology Present? Yes • No •
Saturation Present? (includes capillary fringe) Yes No Depth	(inches):
Describe Recorded Data (stream gauge, monitoring well, as	erial photos, previous inspections), if available:
Remarks:	
drainage patterns saturated to surface, 1" flowing water ne	ar seep

VEGETATION - Use scientific names of plan	nts		ominant pecies?		Sampling Point: AN10 Wet
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test worksheet:
1. Betula alleghaniensis	15	V	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
2. Fraxinus pennsylvanica	15	V	50.0%	FACW	
3.	0		0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4.	0		0.0%		Species Across Air Strata.
5.	0		0.0%		Percent of dominant Species
6	0		0.0%		That Are OBL, FACW, or FAC: 83.3% (A/B)
7	0		0.0%		Prevalence Index worksheet:
	30	= Tc	otal Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		_			0BL species 5 x 1 = 5
1. Acer pensylvanicum	50	✓	76.9%	FACU	FACW species 88 x 2 = 176
2. Betula alleghaniensis	15	✓	23.1%	FAC	FAC species $30 \times 3 = 90$
3	0		0.0%		
4	0		0.0%		Theo species x 4
5	0		0.0%		UPL species X 5 =
<u>6</u>	0		0.0%		Column Totals: 173 (A) 471 (B)
7	0		0.0%		Prevalence Index = B/A = 2.723
(5)	65	= Tc	otal Cove	r	
Herb Stratum (Plot size: 5'					Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation
1. Osmunda cinnamomea	33	✓	42.3%	FACW	✓ Dominance Test is > 50%
2. Impatiens capensis	40	✓	51.3%	FACW	✓ Prevalence Index is ≤3.0 ¹
3.Carex lurida	5		6.4%	OBL	
4.	0		0.0%		
5	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7.	0		0.0%		1 Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0		0.0%		at breast height (DBH), regardless of height.
12.	0		0.0%		
					Sanling/shrub - Woody plants less than 3 in DRH and

______ = Total Cover

0__

0__

0

0.0%

0 = Total Cover

0.0%

0.0%

0.0%

height.

Hydrophytic Vegetation

Present?

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

Woody Vine Stratum (Plot size: _____)

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of

Woody vine - All woody vines greater than 3.28 ft in

Yes ● No ○

size, and woody plants less than 3.28 ft tall.

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN10 Wet

Profile Desc Depth	ription: (Des	scribe to Matrix	the depth	needed to d		t the indic		nfirm the	absence of indicators.)	
(inches)	Color (ı		- %	Color (~ %	Type 1	Loc2	- Texture	Remarks
0-6	10YR	3/2	100%						Sandy Loam	
6-10	2.5Y	4/2	90%	10YR	5/8	10%		M	Fine Sandy Loam	
10+										boul dery
									-	
									-	
									-	
										_
										_
¹ Type: C=Cor	ncentration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=	Matrix
Hydric Soil	Indicators:								Indicators for Prob	olematic Hydric Soils : 3
Histosol				Poly	value Belo	w Surface ((S8) (LRR F	2,) (LRR K, L, MLRA 149B)
	ipedon (A2)				A 149B) Dark Surf	ace (S9) (I	DD D MIE	νΛ 1/10R)		lox (A16) (LRR K, L, R)
☐ Black His						Mineral (F1			5 cm Mucky Peat	t or Peat (S3) (LRR K, L, R)
	n Sulfide (A4) Layers (A5)					Matrix (F2)			Dark Surface (S7	7) (LRR K, L)
	Below Dark S	Surface (A	11)		eted Matri					Surface (S8) (LRR K, L)
_	rk Surface (A		,	Redo	ox Dark Su	urface (F6)				e (S9) (LRR K, L)
Sandy M	uck Mineral (S	S1)				Surface (F	7)		_	Masses (F12) (LRR K, L, R) lain Soils (F19) (MLRA 149B)
☐ Sandy GI	eyed Matrix (S4)		☐ Redo	x Depress	sions (F8)				(147) (MERA 144A, 145, 149B)
Sandy Re	edox (S5)								Red Parent Mate	
	Matrix (S6)								Very Shallow Dar	rk Surface (TF12)
☐ Dark Sur	face (S7) (LRI	R R, MLRA	A 149B)						Other (Explain in	Remarks)
³ Indicators of	f hydrophytic	vegetatio	n and wetla	ind hydrology	must be p	present, un	less disturb	ed or probl	ematic.	
Restrictive L	ayer (if obs	erved):								
Type: b	ouldery									
Depth (inc	ches): 10								Hydric Soil Present?	Yes ● No ○
Remarks:										
1										

Project/Site: Antrim Wind Project			City/County	: Antrim		Sampling Date: 11-Aug-11
Applicant/Owner: Eolian Renewable En	nergy, LLC			Sta	te: NH	Sampling Point: AN10 Upland
Investigator(s): AF JG			Section.	Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.):	Hillside		_	(concave, convex, r		Slope: 15.0 % / 8.5 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					NWI classif	
Soil Map Unit Name:					— NWI CIASSII	ication:
Are climatic/hydrologic conditions o	n the site ty	pical for this time of y	ear?	res ● No ○	(If no, explain in	•
Are Vegetation, Soil	, or Hydrold	ogy 🗌 significant	ly disturbed?	Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At		<u> </u>	ampling	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •				
Hydric Soil Present?	Yes 🔾	No •		he Sampled Area hin a Wetland?	Yes O No 🗨	
Wetland Hydrology Present?	Yes 🔾	No •				
Hydrology						
Wetland Hydrology Indicators:	a raquirad.	abaak all that annly)				ors (minimum of 2 required)
Primary Indicators (minimum of on Surface Water (A1)	e requirea;		(DO)		Surface Soil C	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				dater Table (C2)
Water Marks (B1)		Hydrogen Sulfide			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		ng Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	ed Iron (C4)		Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled S	oils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surface		Other (Explain in F	Remarks)			ohic Relief (D4)
Sparsely vegetated concave surface	3 (88)				FAC-neutral T	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):		_		
Water Table Present? Yes	No 💿	Depth (inches):		Wotland Hydr	rology Present?	Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No 💿	Depth (inches):		wettand Hydi	rology Present?	Tes C NO C
Describe Recorded Data (stream ga	uge, monito	oring well, aerial photo	os, previous i	nspections), if avai	lable:	
Remarks:						

VEGETATION - Use scientific names of p			ominant pecies?		Sampling Point: AN10 Upland
Tree Stratum (Plot size: 30')	Absolute % Cover	Re	el.Strat.	Indicator Status	Dominance Test worksheet:
1 Tours considered	40	✓	42.1%		Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
) Detule menumifore	25	✓	26.3%	FACU FACU	That are OBL, FACW, or FAC: 2 (A)
Caratana a amanda anta	15				Total Number of Dominant
Fraxinus pennsylvanica	15		15.8%	FACW	Species Across All Strata: 6 (B)
Picea rubens			15.8%	FACU	Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC: 33.3% (A/B)
5			0.0%		
·		Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	95	= To	otal Cove	r	Total % Cover of: Multiply by:
. Acer rubrum	50	V	76.9%	FAC	0BL species 0 x 1 = 0
Diego ruhana	15	✓	23.1%	FACU	FACW species 15 x 2 = 30
. Ficea Tuberis			0.0%	17.00	FAC species $70 \times 3 = 210$
·			0.0%		FACU species x 4 = 620
l			0.0%		UPL species $0 \times 5 = 0$
•	0		0.0%		Column Totals: 240 (A) 860 (B)
S			0.0%		
		 = To	otal Cove		
Herb Stratum (Plot size: 5')			otal ooto	•	Hydrophytic Vegetation Indicators:
1. Trientalis borealis	20	✓	25.0%	FAC	Rapid Test for Hydrophytic Vegetation
2. Aralia nudicaulis	50	✓	62.5%	FACU	☐ Dominance Test is > 50%
3. Dryopteris intermedia	10		12.5%	FACU	Prevalence Index is ≤3.0 ¹
4.	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6.	0		0.0%		
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology mus
8.	0		0.0%		be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
0.			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
1.			0.0%		at breast height (DBH), regardless of height.
2.	0		0.0%		
	80	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)					
1			0.0%		Herb - All herbaceous (non-woody) plants, regardless
2			0.0%		size, and woody plants less than 3.28 ft tall.
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in
4		Ш	0.0%		height.
	0	= To	otal Cove	r	
					Hydrophytic Vegetation
					Present? Yes No •

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN10 Upland

Depth (inches)	Color (n	Matrix	- %	Red Color (moist)	dox Features % Type 1	Loc2	- Texture	Remarks			
			100%	Color (moist)	- 76 Type	LOC-		Remarks			
0-5	10YR	3/2					Loam				
5-7	2.5Y	5/1	100%				Fine Loamy Sand				
7-13	10YR	4/3	100%				Very Fine Loamy Sand	- hl-d			
13+								boul dery			
							-				
							-				
								_			
Type: C=Cor	ncentration. D:	=Depletio	n. RM=Redu	iced Matrix, CS=Covere	d or Coated Sand Gra	ins ² Loca	ation: PL=Pore Lining. M=	Matrix			
Hydric Soil								olematic Hydric Soils : 3			
Histosol	(A1)				v Surface (S8) (LRR R	ı					
Histic Epi	pedon (A2)			MLRA 149B)) (LRR K, L, MLRA 149B) dox (A16) (LRR K, L, R)			
☐ Black His	tic (A3)				ice (S9) (LRR R, MLR	A 149B)		t or Peat (S3) (LRR K, L, R)			
Hydrogei	n Sulfide (A4)				Mineral (F1) LRR K, L)		Dark Surface (S7				
Stratified	Layers (A5)			Loamy Gleyed N			Polyvalue Below Surface (S8) (LRR K, L)				
	Below Dark S		11)	Depleted Matrix				se (S9) (LRR K, L)			
	rk Surface (A1	•		Redox Dark Sur Depleted Dark S	, ,		☐ Iron-Manganese Masses (F12) (LRR K, L, R)				
	uck Mineral (S			Redox Depressi			Piedmont Floodp	Piedmont Floodplain Soils (F19) (MLRA 149B)			
	eyed Matrix (S	64)		☐ Redox Depressi	0113 (1 0)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy Re							Red Parent Material (TF2)				
	Matrix (S6) face (S7) (LRR	א א א א א	\ 140D\				Very Shallow Dark Surface (TF12)				
							Other (Explain in	Remarks)			
³ Indicators of	f hydrophytic	vegetatio	n and wetla	nd hydrology must be p	resent, unless disturb	ed or probl	ematic.				
Restrictive L	ayer (if obse	erved):									
Type: b	ouldery										
Depth (inc	ches): 13						Hydric Soil Present?	Yes O No 💿			
Remarks:											



AN10 Upland



AN10 Wetland

Project/Site: Antrim Wind Project	City	/County: Antrim		Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable Energy, L	LC	Sta	te: NH	Sampling Point: AN11 Wet
Investigator(s): AF JG	9	Section, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Hillside		al relief (concave, convex, n		Slope: 7.0 % / 4.0 °
			· ·	
Subregion (LRR or MLRA):	Lat.:	Long	-	Datum:
Soil Map Unit Name:			NWI classif	cation: PSS
Are climatic/hydrologic conditions on the s	ite typical for this time of year?	Yes ● No ○	(If no, explain in	·
Are Vegetation . , Soil . , or H	ydrology L significantly dis	sturbed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation , Soil , or H	ydrology 🗌 naturally proble	ematic? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach		pling point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes No	
Wetland Hydrology Present? Yes	● No ○			
Hydrology				
Wetland Hydrology Indicators:			Secondary Indicate	rs (minimum of 2 required)
Primary Indicators (minimum of one requ	ired: check all that apply)		Surface Soil C	
Surface Water (A1)	Water-Stained Leaves (I	39)	✓ Drainage Patte	
High Water Table (A2)	Aquatic Fauna (B13)	.,,	Moss Trim Lin	
✓ Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor	(C1)	Crayfish Burro	ws (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres a	along Living Roots (C3)	Saturation Vis	ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iro	on (C4)		essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in	n Tilled Soils (C6)	Geomorphic P	
Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	
☐ Inundation Visible on Aerial Imagery (B7) ☐ Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remar	ks)	✓ Microtopograp✓ FAC-neutral Total	
Water Table Present? Yes O No	Depth (inches): Depth (inches):	Wetland Hydr	ology Present?	Yes No
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	0		
Describe Recorded Data (stream gauge, n Remarks:	nonitoring well, aerial photos, pr	evious inspections), if avail	able:	

VEGETATION -	Use scientific names	of plants

Dominant Sampling Point: AN11 Wet Species? Absolute Rel.Strat. Indicator **Dominance Test worksheet:** Tree Stratum (Plot size: 30') Cover Status % Cover **Number of Dominant Species** 1. _____ 0.0% That are OBL, FACW, or FAC: (A) 2. 0 0.0% **Total Number of Dominant** 3. _____ 0 0.0% 5 (B) Species Across All Strata: 4. 0 0.0% Percent of dominant Species 5. 0.0% 100.0% (A/B) That Are OBL, FACW, or FAC: 6. 0 0.0% 0 0.0% Prevalence Index worksheet: Total % Cover of: Multiply by: 0 = Total Cover Sapling/Shrub Stratum (Plot size: 15') OBL species x 1 = 1. Spiraea tomentosa 15 75.0% FACW 126 FACW species x 2 =2. Betula alleghaniensis 5 25.0% FAC 5 15 FAC species x 3 = 3. _____ 0 0.0% 0 FACU species 4. 0 0.0% 0 0 UPL species x 5 = 5. 0 0.0% 93 (B) 166 Column Totals: (A) 6. 0 0.0% 7. _ 0 0.0% Prevalence Index = B/A =1.785 20 = Total Cover Herb Stratum (Plot size: 5') Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation 1. Onoclea sensibilis 27.4% FACW 20 ✓ Dominance Test is > 50% 2.Scirpus cyperinus 27.4% 20 FACW+ ✓ Prevalence Index is ≤3.0 ¹ 3. Carex crinita 25 34.2% OBI Morphological Adaptations 1 (Provide supporting 4. Osmunda cinnamomea 5 6.8% FACW data in Remarks or on a separate sheet) 5. Calamagrostis canadensis 3 4.1% FACW+ Problematic Hydrophytic Vegetation ¹ (Explain) 6. 0 0.0% ¹ Indicators of hydric soil and wetland hydrology must 7. 0 0.0% be present, unless disturbed or problematic. 8. 0 0.0% **Definitions of Vegetation Strata:** 9. 0 0.0% 10. 0 0.0% Tree - Woody plants, 3 in. (7.6 cm) or more in diameter 11. 0 0.0% at breast height (DBH), regardless of height. 12. 0 0.0% Sapling/shrub - Woody plants less than 3 in. DBH and 73 = Total Cover Woody Vine Stratum (Plot size: _____) greater than 3.28 ft (1m) tall... 0.0% Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 0 0.0% 2.____ 0 0.0% Woody vine - All woody vines greater than 3.28 ft in 0 0.0% height. 0 = Total Cover Hydrophytic Vegetation Yes No O Present? Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN11 Wet

Profile Descripe	•	cribe to Matrix	the depth	needed to		t the indic		firm the	absence of indicators.)		
(inches)	Color (m		_ %	Color (%	Type 1	Loc2	Texture	Remarks	
0-6	10YR	3/2	100%						Loam		
6-7	2.5Y	4/1	100%						Fine Sandy Loam		
7-9	2.5Y	4/2	90%	10YR	4/6	10%	С		Fine Sandy Loam		
9+										rocky	
									-		
1 Type: C=Cor		Depletio	n RM=Red	uced Matrix	CS=Cover	ed or Coate	ed Sand Grain	ns 2l nca	ation: PL=Pore Lining. M=	– Matrix	
Hydric Soil		Беріспо	II. KW-Keu	uccu matrix,	03-00761	cu or court	ca Sana Gran	13 2000			
Histosol (Poly	value Belo	w Surface	(S8) (LRR R,			olematic Hydric Soils: 3	
	pedon (A2)			MLR	A 149B)) (LRR K, L, MLRA 149B) dox (A16) (LRR K, L, R)	
☐ Black His	tic (A3)						LRR R, MLRA	149B)		t or Peat (S3) (LRR K, L, R)	
Hydroger	Sulfide (A4)) LRR K, L)		Dark Surface (S7		
	Layers (A5)					Matrix (F2))			Surface (S8) (LRR K, L)	
	Below Dark Su		11)		leted Matri					e (S9) (LRR K, L)	
	k Surface (A12					ırface (F6)	7)			Masses (F12) (LRR K, L, R)	
	uck Mineral (S1				ox Depress	Surface (F	1)		Piedmont Floodp	lain Soils (F19) (MLRA 149B)	
	eyed Matrix (S	4)		∟ Reu	ox Depress	SIONS (F8)			Mesic Spodic (TA	A6) (MLRA 144A, 145, 149B)	
Sandy Re									Red Parent Mate	rial (TF2)	
	Matrix (S6)								Very Shallow Dark Surface (TF12)		
	face (S7) (LRR								Other (Explain in	Remarks)	
³ Indicators o	f hydrophytic \	/egetatio	n and wetla	nd hydrology	/ must be	present, un	less disturbe	d or probl	ematic.		
Restrictive L	ayer (if obse	rved):									
Type: ro	ocks										
Depth (inc	thes): 9								Hydric Soil Present?	Yes ● No ○	
Remarks:											

Project/Site: Antrim Wind Project	City/Coun	ty: Antrim		Sampling Date: 12	-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point:	AN11 Up
Investigator(s): AF JG	Section	n, Township, Range:	S. T.	 R.	
Landform (hillslope, terrace, etc.): Hillside		f (concave, convex, n			 20.0 % / 11.3 °
Subregion (LRR or MLRA):	Lat.:	Long		· Datu	
Soil Map Unit Name:			NWI classif		
		Yes No	_		
Are climatic/hydrologic conditions on the site ty			(If no, explain in	•	
Are Vegetation , Soil , or Hydro	logy significantly disturbed	d? Are "Normal	Circumstances" p	resent? Yes •	No O
Are Vegetation , Soil , or Hydro	logy 🗌 naturally problematic	? (If needed,	explain any answe	ers in Remarks.)	
Summary of Findings - Attach site		g point location	s, transects,	important fea	tures, etc.
Hydrophytic Vegetation Present? Yes	No •				
Hydric Soil Present? Yes	NO S	the Sampled Area ithin a Wetland?	Yes O No 🗨)	
Wetland Hydrology Present? Yes	No •				
Remarks: (Explain alternative procedures her	e or in a separate report.)				
Hydrology					
Wetland Hydrology Indicators:			Secondary Indicato	ors (minimum of 2 requ	ired)
Primary Indicators (minimum of one required;	check all that apply)		Surface Soil Ci	-	
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patte		
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lin	es (B16)	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burro		
Sediment Deposits (B2)	Oxidized Rhizospheres along Li			ible on Aerial Imagery	(C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)			essed Plants (D1)	
☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5)	Recent Iron Reduction in Tilled	Soils (C6)	Geomorphic P Shallow Aquita		
Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)			ara (D3) ohic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)	Uther (Explain in Remarks)		FAC-neutral To		
Field Observations: Surface Water Present? Yes No •	Depth (inches):				
Water Table Present? Yes No					
	Depth (inches):	Wetland Hydr	ology Present?	Yes O No 💿	
(includes capillary fringe) Yes V No	Depth (inches):				
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous	s inspections), if avail	able:		
Remarks:					
iterial ks.					

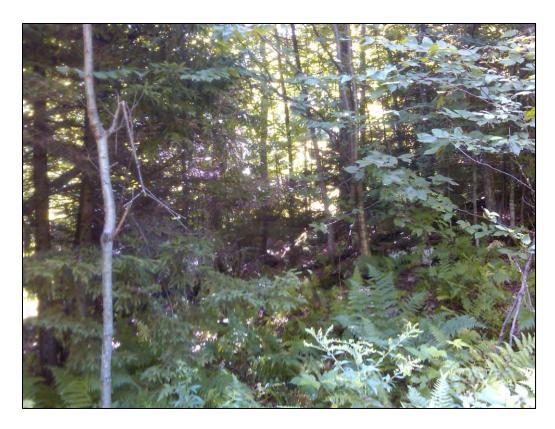
/EGETATION - Use scientific names of p	iuiits		ominant ecies?		Sampling Point: AN11 Up
Tree Stratum (Plot size: 30')	Absolute % Cover	Re	l.Strat.	Indicator Status	
Fagus grandifolia	20	V	22.2%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2. Acer saccharum	60		66.7%	FACU-	That are OBL, FACW, OF FAC.
Ouerous rubre	10		11.1%	FACU-	Total Number of Dominant
		\Box	0.0%	TACO	Species Across All Strata: 7 (B)
l i		\Box	0.0%		Percent of dominant Species
). 			0.0%		That Are OBL, FACW, or FAC:14.3% (A/B)
7.			0.0%		Prevalence Index worksheet:
			tal Cove		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		= 10	otal Cove		0BL species 0 x 1 = 0
. Quercus rubra	20	V	23.5%	FACU-	FACW species $0 \times 2 = 0$
Picea rubens	20	V	23.5%	FACU	X
Betula alleghaniensis	15		17.6%	FAC	1/0 \$66765
. Acer saccharum	10		11.8%	FACU-	10 species x 4
Ostrya virginiana	20	\checkmark	23.5%	FACU-	UPL species $\frac{10}{}$ x 5 = $\frac{50}{}$
5	0		0.0%		Column Totals: 188 (A) 744 (B)
·	0		0.0%		Prevalence Index = B/A = 3.957
Herb Stratum (Plot size: 5')		= To	tal Cove	r	Hydrophytic Vegetation Indicators:
					Rapid Test for Hydrophytic Vegetation
1.Dennstaedtia punctilobula			76.9%	UPL	☐ Dominance Test is > 50%
2. Trientalis borealis			23.1%	FAC	Prevalence Index is ≤3.0 ¹
3.			0.0%		☐ Morphological Adaptations ¹ (Provide supporting
4			0.0%		data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0	\vdash	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7	0	\vdash	0.0%		be present, unless disturbed or problematic.
8	0		0.0%		Definitions of Vegetation Strata:
9	0		0.0%		Definitions of Vegetation Strata.
0	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diamete
1	0		0.0%		at breast height (DBH), regardless of height.
2.	0	Ш	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	13	= To	tal Cove	r	greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless
7			0.0%		size, and woody plants less than 3.28 ft tall.
2 3			0.0%		
3 4			0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
⊤.			otal Cove		, noight
		_ 10	iai cove	•	
					Hydrophytic Vegetation
					Present? Yes No •

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN11 Up

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)
Depth (inches)		Matrix		Redox Features	
	Color (I		<u>%</u>	Color (moist) % Type 1 Loc ²	Texture Remarks
0-4	10YR	3/2	100%		Loam
4-5	2.5Y	4/1	100%		Fine Sandy Loam
5-9	10YR	4/3	100%		Very Fine Sandy Loam
9-15	10YR	4/6	100%		Very Fine Sandy Loam
¹ Type: C=Con	centration. D	=Depletio	n. RM=Rec	luced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix
Hydric Soil I	Indicators:				Indicators for Problematic Hydric Soils: 3
Histosol (Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pedon (A2)			MLRA 149B) Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hist				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Layers (A5) Below Dark S	Surface (A	11\	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	k Surface (A		11)	Redox Dark Surface (F6)	☐ Thin Dark Surface (S9) (LRR K, L)
	uck Mineral (S			☐ Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)
	eyed Matrix (Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Re					☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B) ☐ Red Parent Material (TF2)
	Matrix (S6)				Very Shallow Dark Surface (TF12)
☐ Dark Surf	face (S7) (LRI	R R, MLRA	149B)		Other (Explain in Remarks)
³ Indicators o	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble	
Restrictive L					
Type: _Bo	-	erveu).			
	thes): 15+				Hydric Soil Present? Yes ○ No ●
Remarks:	,				
Nemarks.					



AN11 Upland



AN11 Wetland

Project/Site: Antrim Wind Project			City/Count	y : Antrim		Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable Er	nergy, LLC			Sta	te: NH	Sampling Point: an12 wetland
Investigator(s): AF JG			Section	, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Hillside			(concave, convex, n		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):	- Imisiao					
		Lat.:		Long	-	Datum:
Soil Map Unit Name:					NWI classif	cation: PSS
Are climatic/hydrologic conditions or	n the site ty	pical for this time of yea	ar?	Yes ● No ○	(If no, explain in	·
Are Vegetation . , Soil .	, or Hydrold	ogy 🗌 significantly	y disturbed	l? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally pro	oblematic?	? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - At	tach site	map showing sa	ampling	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes •	No O				
Hydric Soil Present?	Yes	No O		the Sampled Area thin a Wetland?	Yes No	
Wetland Hydrology Present?	Yes 💿	No O				
Hydrology						
Wetland Hydrology Indicators:	o roquirod:	check all that apply)				rs (minimum of 2 required)
Primary Indicators (minimum of on Surface Water (A1)	e requireu,		(DO)		Surface Soil Co	
High Water Table (A2)		Water-Stained Leave			Moss Trim Lin	
Saturation (A3)		Marl Deposits (B15)				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide Oc			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizospher		vina Roots (C3)		ble on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduce	-	(,		essed Plants (D1)
☐ Algal Mat or Crust (B4)		Recent Iron Reducti		Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface ((C7)		Shallow Aquita	ard (D3)
Inundation Visible on Aerial Imagery		Other (Explain in Re	emarks)		Microtopograp	
Sparsely Vegetated Concave Surface	e (B8)				FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes	No 💿	Depth (inches):				Yes No
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches): _	3	Wetland Hydr	rology Present?	Yes ♥ NO ∪
Describe Recorded Data (stream ga	uge, monito	oring well, aerial photos	s, previous	inspections), if avail	lable:	
Damanda						
Remarks:						

VEGETATION -	Use scientific	names of	plants
VEGETATION -	OSC SCICITUIE	Harrics Or	piarits

Dominant
C:

7-1	Absolute		el.Strat. I		Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Cc	over S	Status	Number of Dominant Species
1	0	Ш	0.0%		That are OBL, FACW, or FAC: 5 (A)
2	0		0.0%		
3	0		0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
4.	0		0.0%		Species relies in strata.
5.			0.0%		Percent of dominant Species
6.	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
7	0	\Box	0.0%		Prevalence Index worksheet:
	0 =	— - Т	otal Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		- 10	otal cover		0BL species 15 x 1 = 15
1. Spiraea alba	25	V	33.3%	FACW+	FACW species 125 x 2 = 250
2. Spiraea tomentosa	_50_	V	66.7%	FACW	
3	0_		0.0%		The species x s =
4			0.0%		FACU Species
5.			0.0%		UPL species0 x 5 =0
6.			0.0%		Column Totals: 140 (A) 265 (B)
7.	0	\Box	0.0%		Prevalence Index = B/A = 1.893
		— - та	otal Cover		
Herb Stratum (Plot size: 5'		- 10	otal Cover		Hydrophytic Vegetation Indicators:
1.Carex crinita	15	V	23.1%	OBL	Rapid Test for Hydrophytic Vegetation
2. Onoclea sensibilis	25	<u>_</u>		FACW	✓ Dominance Test is > 50%
2 c.l			7.7%	FACW+	✓ Prevalence Index is ≤3.0 ¹
4. Rubus hispidus	20	$\overline{\mathbf{V}}$		FACW	☐ Morphological Adaptations ¹ (Provide supporting
5.	0		0.0%	TACW	data in Remarks or on a separate sheet)
6					☐ Problematic Hydrophytic Vegetation ¹ (Explain)
7.		Н	0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.		Н	0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
	0		0.0%		Definitions of Vegetation strata.
10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11			0.0%		at breast height (DBH), regardless of height.
12	0	Ш	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	65=	= To	otal Cover		greater than 3.28 ft (1m) tall
	0		0.007		Llark All banks as a configuration of
1		\Box	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2		\vdash	0.0%		
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in
4		Ш	0.0%		height.
	=	= To	otal Cover		
					Hydrophytic Vegetation
					Present? Yes No
Remarks: (Include photo numbers here or on a separate she	et.)				
	,				

Sampling Point: an12 wetland

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an12 wetland

Dect					_			minim the	absence of indicators.)			
Depth (inches)	. Color (ı	Matrix noist)	_ % -	_ Color (m		dox Featu %	ires Type 1	Loc²	Texture	Remarks		
0-3	10YR	3/2	100%		,		. 780		Loam			
3-12	2.5Y	4/2	95%	10YR	4/6	5%	С	PL	Fine Sandy Loam			
12-16									Fine Sandy Loam			
12-10	2.5Y 4/1 95% 10YR 4/6 5% C M					Tille Salidy Loan						
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS	=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=M	latrix		
Hydric Soil I	ndicators:								Indicators for Proble	ematic Hydric Soils : 3		
Histosol (A				Polyva MLRA	lue Belov	v Surface	(S8) (LRR F	₹,		(LRR K, L, MLRA 149B)		
	pedon (A2)				,	nca (SQ) (LRR R, MLF	οΛ 1/OR)		x (A16) (LRR K, L, R)		
☐ Black Hist) LRR K, L)		5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)		
_	Sulfide (A4) Layers (A5)			_	-	Matrix (F2)			Dark Surface (S7) (LRR K, L)			
	Below Dark S	Surface (A	11)	☐ Deplet	ed Matri:	k (F3)				urface (S8) (LRR K, L)		
	k Surface (A1		,	Redox	Dark Su	rface (F6)			Thin Dark Surface (S9) (LRR K, L)			
Sandy Mu	ıck Mineral (S	1)				Surface (F	7)		_	Masses (F12) (LRR K, L, R)		
	eyed Matrix (Redox	Depress	ions (F8)			☐ Piedmont Floodplain Soils (F19) (MLRA 149B) ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy Re	dox (S5)								Red Parent Material (TF2)			
	Matrix (S6)								Very Shallow Dark Surface (TF12)			
Dark Surf	ace (S7) (LRI	R R, MLRA	149B)						Other (Explain in F	Remarks)		
³ Indicators of	f hydrophytic	vegetatio	n and wetla	nd hydrology n	nust be p	resent, ur	less disturb	ed or probl	ematic.			
Restrictive La	ayer (if obs	erved):										
Туре:												
Depth (incl	hes):								Hydric Soil Present?	Yes ● No ○		
Remarks:												

Project/Site: Antrim Wind Project			City/Count	:y: Antrim		Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	te: NH	Sampling Point: an12 upland
Investigator(s): AF JG			Section	, Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.):	Hillside		-	f (concave, convex, r		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
Soil Map Unit Name:					NWI classif	ication:
Are climatic/hydrologic conditions of	n the site ty	pical for this time of ye	ear?	Yes No	(If no, explain in	•
Are Vegetation, Soil	, or Hydrold	ogy 🗌 significant	ly disturbed	l? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic	? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At			ampling	point location	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes 🔾	No •				
Hydric Soil Present?	Yes 🔾	No •		the Sampled Area thin a Wetland?	Yes \bigcirc No $lacktriangle$)
Wetland Hydrology Present?	Yes 🔾	No •				
Hydrology						
Wetland Hydrology Indicators:						ors (minimum of 2 required)
Primary Indicators (minimum of or	e required;				Surface Soil Ci	
Surface Water (A1) High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1)			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)				res along Living Roots (C3) Saturation Visible on Aerial Imagery (C9)		
☐ Drift deposits (B3)		Presence of Reduc	-	3		essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled	Soils (C6)	Geomorphic P	osition (D2)
Iron Deposits (B5)		☐ Thin Muck Surface	(C7)		Shallow Aquita	ard (D3)
Inundation Visible on Aerial Imager		Other (Explain in R	emarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface	e (B8)				FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes	No 💿	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No •	Depth (inches):		Wetland Hydi —	rology Present?	Yes ○ NO ⑤
Describe Recorded Data (stream ga	iuge, monito	oring well, aerial photo	s, previous	inspections), if avai	lable:	
Remarks:						

VEGETATION - Use scientific names of pla	nts		minant		Sampling Point: an12 upland	
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel	.Strat.	Indicator Status	Dominance Test worksheet:	
1. Quercus rubra	15	<u></u>	60.0%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: (A)	
2. Tsuga canadensis 3	0 0		0.0% 0.0%	FACU	Total Number of Dominant Species Across All Strata: 6 (B)	
5	0		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)	
7		 = Tot	0.0% tal Cove	r	Prevalence Index worksheet: Total % Cover of: Multiply by:	
Acer pensylvanicum Betula alleghaniensis Acer saccharum 4.	10		44.4% 22.2% 33.3% 0.0%	FACU FACU-	OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 10 x 3 = 30 FACU species 88 x 4 = 352	
5	0		0.0% 0.0% 0.0%		UPL species 90 x 5 = 450 Column Total s: 188 (A) 832 (B) Prevalence Index = B/A = 4.426	
Herb Stratum (Plot size: 5') 1.Dennstaedtla punctilobula	90	= Tot	76.3% 8.5%	UPL	Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation Dominance Test is > 50%	
2.Solidago canadensis 3.Rubus alumnus 4.Dryopteris intermedia 5.Aralia nudicaulis			8.5% 8.5% 4.2%	FACU- FACU-	 Prevalence Index is ≤3.0 ¹ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 	

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

= Total Cover

= Total Cover

0

0

0

0

0

118

0

0

0

0

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

8.

Woody Vine Stratum (Plot size:_____)

9.

10.

11.

12.

¹ Indicators of hydric soil and wetland hydrology must

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter

Sapling/shrub - Woody plants less than 3 in. DBH and

Herb - All herbaceous (non-woody) plants, regardless of

No 💿

Woody vine - All woody vines greater than 3.28 ft in

be present, unless disturbed or problematic.

at breast height (DBH), regardless of height.

size, and woody plants less than 3.28 ft tall.

Yes 🔾

Definitions of Vegetation Strata:

greater than 3.28 ft (1m) tall..

height.

Hydrophytic Vegetation

Present?

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an12 upland

	iption: (Des	scribe to	the depth	needed to document the indicator or confirm the a	bsence of indicators.)		
Depth Matrix (inches) Color (moist) %				Redox Features	Touture		
				Color (moist) % Type 1 Loc ²	Texture Remarks		
0-4	10YR	3/2	100%		Loam		
4-5	2.5Y	5/1	100%		Fine Sandy Loam		
5-12	10YR	4/3	100%		Fine Sandy Loam		
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix		
Hydric Soil I	ndicators:				Indicators for Problematic Hydric Soils: 3		
Histosol (A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)		
Histic Epi	pedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)		
Black Hist	tic (A3)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)		
	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)		
	Layers (A5)			Depleted Matrix (F2)	Polyvalue Below Surface (S8) (LRR K, L)		
	Below Dark S		11)	Redox Dark Surface (F6)	☐ Thin Dark Surface (S9) (LRR K, L)		
	k Surface (A1			Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)		
	ıck Mineral (S eyed Matrix (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)		
Sandy Re		54)		•	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
	Matrix (S6)				Red Parent Material (TF2)		
	ace (S7) (LRF	R R, MLRA	149B)		Very Shallow Dark Surface (TF12)		
					Other (Explain in Remarks)		
			n and wella	and hydrology must be present, unless disturbed or proble	manc.		
Restrictive L	ayer (if obs	erved):					
Type:	L				Hydric Soil Present? Yes ○ No ●		
Depth (inc	hes):				103 0 100 0		
Remarks:							



AN12 Upland



AN12 Wetland

Project/Site: Antrim Wind Project		City/County: Antrim		Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable Ene	ergy, LLC	Sta	te: NH	Sampling Point: an13 wetland
Investigator(s): AF JG		Section, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): For	notslone	Local relief (concave, convex, r		Slope: 3.0 % / 1.7 °
-				
Subregion (LRR or MLRA):	Lat.:	Lono	-	Datum:
Soil Map Unit Name:			NWI classif	cation: PSS
Are climatic/hydrologic conditions on	the site typical for this time of y	year? Yes ● No ○	(If no, explain in	·
Are Vegetation . , Soil . ,	, or Hydrology 🔲 significant	tly disturbed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil,	, or Hydrology 🔲 naturally į	problematic? (If needed.)	explain any answe	ers in Remarks.)
Summary of Findings - Atta				
J	Yes No			
Hydric Soil Present?	Yes ● No ○	Is the Sampled Area within a Wetland?	Yes ● No ○	
Wetland Hydrology Present?	Yes ● No ○			
Hydrology				
Hydrology				
Wetland Hydrology Indicators:	required, about all that apply)			rs (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)		(7-2)	Surface Soil Ci	
High Water Table (A2)	Water-Stained Lea☐ Aquatic Fauna (B1	• •	✓ Drainage Patte Moss Trim Lin	
Saturation (A3)	Marl Deposits (B1			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide		Crayfish Burro	
Sediment Deposits (B2)		neres along Living Roots (C3)		ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduc			essed Plants (D1)
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)	Geomorphic P	
☐ Iron Deposits (B5)	☐ Thin Muck Surface	• •	Shallow Aquita	
Inundation Visible on Aerial Imagery	(B7) Other (Explain in I	Remarks)	Microtopograp	hic Relief (D4)
Sparsely Vegetated Concave Surface		,	FAC-neutral To	est (D5)
Field Observations:				
Surface Water Present? Yes	No Depth (inches):			
Water Table Present? Yes	No Depth (inches):			
Saturation Present? (includes capillary fringe) Yes	No O Depth (inches):	Wetland Hydi	rology Present?	Yes ● No ○
Describe Recorded Data (stream gau Remarks:	ge, monitoring well, aerial photo	os, previous inspections), if avai	lable:	

VEGETATION -	Use scientific	names of	plants
---------------------	----------------	----------	--------

Dominant	
Species?	

- O. (Diet size)	Absolute			Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover		over	Status	Number of Dominant Species
1	0		0.0%		That are OBL, FACW, or FAC: 3 (A)
2		Ц	0.0%		Total Number of Dominant
3	0	Ш	0.0%		Species Across All Strata: 3 (B)
4	0		0.0%		
5			0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6	0	Ш	0.0%		That are OBL, FACW, or FAC.
7	0		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= To	otal Cove	r	Total % Cover of: Multiply by:
1. Spiraea tomentosa	66	~	72.5%	FACW	0BL speci es 53 x 1 = 53
2 Appr rubrum	10		11.0%	FAC	FACW species 107 x 2 = 214
0 0 1 11	15		16.5%	FACW+	FAC species x 3 = 30
			0.0%	FACVV+	FACU speci es0 x 4 =0
4 5.			0.0%		UPL species x 5 =0
					Column Totals: 170 (A) 297 (B)
			0.0%		(1)
7	0	\Box	0.0%		Prevalence Index = B/A = 1.747
Herb Stratum (Plot size: 5')	91	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1.Carex lurida	8		10.1%	OBL	Rapid Test for Hydrophytic Vegetation
2 Oncolos conclidito	_	\Box	-		✓ Dominance Test is > 50%
2		Н	6.3%	FACW	✓ Prevalence Index is ≤3.0 ¹
3. Eupatorium perfoliatum			3.8%	FACW+	☐ Morphological Adaptations ¹ (Provide supporting
4. Rubus hispidus	15		19.0%	FACW	data in Remarks or on a separate sheet)
5. Carex crinita		✓	31.6%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
6. Scirpus cyperinus	3		3.8%	FACW+	1 Indicators of hydric sail and wathout hydrology much
7.Carex trisperma		✓	25.3%	OBL	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0		0.0%		Definitions of Vegetation Strata:
9	0		0.0%		Definitions of Vegetation Strata.
10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12	0		0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)		= To	otal Cove	r	greater than 3.28 ft (1m) tall
	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
1 2.	0		0.0%		size, and woody plants less than 3.28 ft tall.
	0	\Box	0.0%		
3 4.	0	\Box	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4			otal Cove		noight.
	0	= 10	otal Cove	r	
					Hydrophytic
					Vegetation Vac A Na O
					Present? Yes No V
Remarks: (Include photo numbers here or on a separate she	et.)				

Sampling Point: an13 wetland

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an13 wetland

Depth (inches)	. 0-1 (Matrix	_ %	- 0-1		dox Featu				Damante	
	Color (r		100%	Color ((moist)	%	Type 1	Loc ²	Texture	Remarks	
0-5	10YR	3/2							Loam		
5-6	2.5Y	4/1	100%						Fine Sandy Loam		
6-16	2.5Y	4/2	90%	10YR	5/8	10%	C	M	Fine Sandy Loam		
Type: C=Cor	ncentration. D	=Depletio	n. RM=Redu		CS=Cover	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=Ma	ıtrix	
Hydric Soil	Indicators:								Indicators for Proble	matic Hydric Soils : 3	
Histosol	(A1)					w Surface ((S8) (LRR F	₹,		_RR K, L, MLRA 149B)	
	ipedon (A2)				A 149B)	(CO) (I		NA 140D)		(A16) (LRR K, L, R)	
☐ Black His	` '					ace (S9) (I				r Peat (S3) (LRR K, L, R)	
	n Sulfide (A4)					Mineral (F1 Matrix (F2)		1	Dark Surface (S7) (
	Layers (A5)				leted Matri				Polyvalue Below Su	rface (S8) (LRR K, L)	
	Below Dark S rk Surface (A1		111)		ox Dark Su				Thin Dark Surface ((S9) (LRR K, L)	
	•	•				Surface (F	7)		Iron-Manganese Masses (F12) (LRR K, L, R)		
	uck Mineral (S eyed Matrix (S				ox Depress					n Soils (F19) (MLRA 149B)	
	edox (S5)	34)								(MLRA 144A, 145, 149B)	
	Matrix (S6)								Red Parent Material		
_	face (S7) (LRF	R R, MLRA	A 149B)						Very Shallow Dark S		
	of hydrophytic			nd hydrology	ı must he r	resent un	lass disturi	ned or probl	Other (Explain in Re	erriai ks)	
			on and wetta	id Hydrolog	y mast be p	oresent, un	icaa diaturi	oca or probl	ematic.		
Restrictive L	-	ervea):									
Depth (inc									Hydric Soil Present?	Yes ● No ○	
	10										
Remarks:											

Project/Site: Antrim Wind Project	City/Coun	nty: Antrim		Sampling Date: 12-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: an13 upland
Investigator(s): AF JG	Sectio	n, Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.): Footslope		ef (concave, convex, n		Slope: 4.0 % / 2.3 °
Subregion (LRR or MLRA):	Lat.:	Long	 1.:	Datum:
Soil Map Unit Name:			NWI classifi	ication:
		Yes ● No ○		
Are climatic/hydrologic conditions on the site ty			(If no, explain in	
Are Vegetation , Soil , or Hydro	logy	d? Are "Normal	Circumstances" p	oresent? Yes S NO C
Are Vegetation, Soil, or Hydro	logy naturally problemation	? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site		g point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No •			
Hydric Soil Present? Yes	NO S	s the Sampled Area vithin a Wetland?	Yes \bigcirc No $lacktriangle$)
Wetland Hydrology Present? Yes	No ●			
Remarks: (Explain alternative procedures her	e or in a separate report.)			
Hydrology				
Wetland Hydrology Indicators:			Socondary Indicate	ors (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)		Surface Soil Co	•
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patte	
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lin	
Saturation (A3)	Marl Deposits (B15)		Dry Season W	ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres along L	-		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)			essed Plants (D1)
☐ Algal Mat or Crust (B4)☐ Iron Deposits (B5)	Recent Iron Reduction in Tilled	Soils (C6)	Geomorphic P	
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)		Shallow Aquita	ard (D3) phic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)		FAC-neutral To	
Sparsery regetated concave surrace (55)			TAC-neutral iv	EST (DO)
Field Observations: Surface Water Present? Yes No	5 4 6 4)			
	Depth (inches):			
Water Table Present? Yes No •	Depth (inches):	Wetland Hydr	ology Present?	Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No •	Depth (inches):		ology i resent.	100 1 100 1
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous	s inspections), if avail	able:	
Remarks:				

VEGETATION - Use scientific names of pla	ants		ominant pecies?		Sampling Point: an13 upland
Tree Stratum (Plot size: 30')	Absolute % Cover		el.Strat. over	Indicator Status	Dominance Test worksheet:
1 Acer saccharum	10	V	66.7%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2. Picea rubens		V	33.3%	FACU	That are obt, facw, of fac.
3.		\Box	0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4.	0	\Box	0.0%		Species Across All Strata: 6 (B)
5.	0	\Box	0.0%		Percent of dominant Species
6.	0		0.0%		That Are OBL, FACW, or FAC: 16.7% (A/B)
7	0		0.0%		Prevalence Index worksheet:
	15	= To	otal Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		_		•	0BL speci es 0 x 1 = 0
1. Acer pensylvanicum	33	✓	32.0%	FACU	FACW species 20 x 2 = 40
2. Prunus serotina	10		9.7%	FACU	FAC species
3. Acer saccharum	50	✓	48.5%	FACU-	FACU species 193 x 4 = 772
4. Populus tremula	10		9.7%	FACU	Thou species x 4
5	0		0.0%		UPL species X 5 =
6	0		0.0%		Column Totals: 218 (A) 837 (B)
7	0	Ш	0.0%		Prevalence Index = B/A = 3.839
Herb Stratum (Plot size: 5')	103	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1.Aralia nudicaulis	75	✓	75.0%	FACU	Rapid Test for Hydrophytic Vegetation
2. Rubus hispidus	20	✓	20.0%	FACW	☐ Dominance Test is > 50%
3. Dennstaedtia punctilobula	5		5.0%	UPL	Prevalence Index is ≤3.0 ¹
4	0		0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0		0.0%		
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must
8	0		0.0%		be present, unless disturbed or problematic.
9	0		0.0%		Definitions of Vegetation Strata:
10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12	0		0.0%		Conling/objub Woody plants loss than 2 in DDL and
	100	= To	otal Cove		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)					
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2	0	\Box	0.0%		SIZE, AND WOODY PIANTS IESS MAIT S.ZO IT TAIL.

0.0%

height.

Hydrophytic Vegetation

Present?

0.0%

0 = Total Cover

___0

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

Woody vine - All woody vines greater than 3.28 ft in

Yes ○ No ●

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an13 upland

Profile Descr	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		/latrix		Redox Features		B
	Color (m		%	Color (moist) % Type 1 Loc²	Texture	Remarks
0-6	10YR	3/2	100%	·	Loam	
6-7	2.5Y	5/1	100%		Fine Loamy Sand	
7-17	10YR	4/3	100%		Fine Sandy Loam	
			-	·		
¹ Type: C=Con	centration. D=	Depletio	n. RM=Red	luced Matrix, CS=Covered or Coated Sand Grains ² Loc	ation: PL=Pore Lining. M=N	
Hydric Soil I	Indicators:				Indicators for Drobl	ematic Hydric Soils : 3
Histosol (Polyvalue Below Surface (S8) (LRR R,		
	pedon (A2)			MLRA 149B)		(LRR K, L, MLRA 149B)
Black Hist				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		ox (A16) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)		or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7)	
	Below Dark Su	rface (Δ	11)	Depleted Matrix (F3)		Surface (S8) (LRR K, L)
	rk Surface (A12		11)	Redox Dark Surface (F6)	Thin Dark Surface	
	,	•		Depleted Dark Surface (F7)	Iron-Manganese N	Masses (F12) (LRR K, L, R)
	uck Mineral (S1			Redox Depressions (F8)	Piedmont Floodpla	ain Soils (F19) (MLRA 149B)
	eyed Matrix (S4	ł)				5) (MLRA 144A, 145, 149B)
Sandy Re					Red Parent Mater	ial (TF2)
	Matrix (S6)				Very Shallow Dark	Surface (TF12)
☐ ☐ Dark Surf	face (S7) (LRR	R, MLRA	. 149B)		Other (Explain in	Remarks)
³ Indicators o	f hydrophytic v	egetatio	n and wetla	and hydrology must be present, unless disturbed or prob	lematic.	
Restrictive I	ayer (if obse	ved).				
Type:	.a.yo. (o.zoo.	,.				
Depth (inc	has).				Hydric Soil Present?	Yes ○ No ●
Remarks:						



AN13 Upland



AN13 Wetland

Project/Site: Antrim Wind Project	City/C	County: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy,	LLC	Stat	te: NH	Sampling Point: an14 wetland
Investigator(s): AF JG	Se	ction, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Hillsig		relief (concave, convex, n		Slope: 10.0 % / 5.7 °
· · · · · · · · · · · · · · · · · · ·			-	
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
Soil Map Unit Name:			NWI classif	cation: PSS
Are climatic/hydrologic conditions on the	site typical for this time of year?	Yes 💿 No 🔾	(If no, explain in	*
Are Vegetation . , Soil . , or H	Hydrology 🔲 significantly dist	urbed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or F	Hydrology	natic? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach	site map showing samp		•	
3 3	, O No			
Hydric Soil Present? Yes	s ● No ○	Is the Sampled Area within a Wetland?	Yes ● No ○	
Wetland Hydrology Present? Yes	s ● No ○			
Hydrology				
Wetland Hydrology Indicators: Primary Indicators (minimum of one requ	uirod: chock all that apply)			rs (minimum of 2 required)
Surface Water (A1)	Water-Stained Leaves (B9	`	Surface Soil Co	
High Water Table (A2)	Aquatic Fauna (B13))	Moss Trim Lin	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C	1)	Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres ald			ble on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron	(C4)	Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in	Tilled Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks	5)	Microtopograp	
Sparsely Vegetated Concave Surface (B8)			✓ FAC-neutral To	est (D5)
Field Observations:				
Curiaco Mater Procenti	O Depth (inches):			
	o O Depth (inches):	Watland Hide	ology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes No.	Depth (inches):	0 Wetland Hydr	ology Present?	res ⊕ ino ⊖
Describe Recorded Data (stream gauge,	monitoring well, aerial photos, pre-	vious inspections), if avail	able:	
Remarks:				
sphagnum 25% cover				

VEGETATIO	N - Use	scientific na	mes of plan	nts	Dominant Species?		Sampling Point:
Tree Stratum	(Plot size:	,		Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
rree stratum	(1 100 3120.			70 COVE	COVCI	Status	N I CD I CO

vegeration - use scientific names of plan	nıs		ominant pecies?		Sampling Point: an14 wetland					
75.	Absolute	Re	Rel.Strat. Indica		Dominance Test worksheet:					
Tree Stratum (Plot size:)	% Cover	Co	over	Status	Number of Dominant Species					
1	0		0.0%		That are OBL, FACW, or FAC: 4 (A)					
2	0		0.0%		Total Number of Dominant					
3	0		0.0%		Species Across All Strata: 4 (B)					
4	0		0.0%		Dercent of deminent Charles					
5			0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)					
6			0.0%							
7		Ш	0.0%		Prevalence Index worksheet:					
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cove	r	Total % Cover of: Multiply by:					
1. Spiraea tomentosa	20	V	57.1%	FACW	08L species 15 x 1 = 15					
2. Acer rubrum	10	V	28.6%	FAC	FACW species $\frac{88}{10}$ x 2 = $\frac{176}{54}$					
3. Fraxinus pennsylvanica	5		14.3%	FACW	FAC species $\frac{18}{2}$ x 3 = $\frac{54}{2}$					
4			0.0%		FACU species $0 \times 4 = 0$					
5.	0		0.0%		UPL species 0 x 5 = 0					
6.			0.0%		Column Total s: 121 (A) 245 (B)					
7.	0		0.0%		Prevalence Index = B/A = 2.025					
	35	= To	otal Cove	r	Hydrophytic Vegetation Indicators:					
Herb Stratum (Plot size: 5')		_			Rapid Test for Hydrophytic Vegetation					
1 .Onoclea sensibilis	40	✓	46.5%	FACW	✓ Dominance Test is > 50%					
2.Osmunda cinnamomea	10		11.6%	FACW	✓ Prevalence Index is ≤3.0 ¹					
3. Eupatoriadelphus maculatus	. 8		9.3%	FACW	Morphological Adaptations ¹ (Provide supporting					
4. Scirpus cyperinus	5		5.8%	FACW+	data in Remarks or on a separate sheet)					
5. Carex lurida	15	V	17.4%	OBL	☐ Problematic Hydrophytic Vegetation ¹ (Explain)					
6.Rubus idaeus	8		9.3%	FAC-						
7	0	Ц	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
8	0	Ц	0.0%							
9	0		0.0%		Definitions of Vegetation Strata:					
10			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter					
11			0.0%		at breast height (DBH), regardless of height.					
12	0	Ш	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and					
Woody Vine Stratum (Plot size:)	86	= To	otal Cove	r	greater than 3.28 ft (1m) tall					
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of					
2	0	\Box	0.0%		size, and woody plants less than 3.28 ft tall.					
3	0		0.0%		Manda di Cina Alla con di Cina					
4	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in height.					
	0 :	= T	otal Cove	r						
		,	otal 0010							
					Hydrophytic Vegetation Present? Yes No					
Remarks: (Include photo numbers here or on a separate she	eet.)									

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an14 wetland

Depth (inches)	* 0.1 1	Matrix			dox Features	-	- -	Day of Lo
	Color (r		%	Color (moist)	% Туре	e 1 Loc²	Texture	Remarks
0-8	10YR	3/2	100%			_	Sandy Loam	
8-11	2.5Y	5/1	100%				Sandy Loam	
								_
							-	
							-	
							-	
								<u> </u>
								_
Type: C=Cor	centration D	=Depletic	n RM=Redi		ed or Coated Sand	Grains 21 oca	ation: PL=Pore Lining. M=	— =Matrix
Hydric Soil		- Воріскі	711. TUVI—TUGUE	acca matrix, co-covere	or course sure	Ordins Look		
Histosol (Polyvalue Belov	v Surface (S8) (LR	PR R		blematic Hydric Soils: 3
	pedon (A2)			MLRA 149B)	V Sarrace (SO) (Er			D) (LRR K, L, MLRA 149B)
Black His				☐ Thin Dark Surfa	ace (S9) (LRR R, I	MLRA 149B)		edox (A16) (LRR K, L, R)
	Sulfide (A4)			Loamy Mucky N	Mineral (F1) LRR K	., L)		at or Peat (S3) (LRR K, L, R)
	Layers (A5)			Loamy Gleyed	Matrix (F2)		Dark Surface (S	V Surface (S8) (LRR K, L)
✓ Depleted	Below Dark S	Surface (A	11)	Depleted Matrix				ce (S9) (LRR K, L)
☐ Thick Dar	k Surface (A1	2)		Redox Dark Sui				e Masses (F12) (LRR K, L, R)
Sandy Mu	ıck Mineral (S	1)		Depleted Dark				plain Soils (F19) (MLRA 149B)
Sandy Gl	eyed Matrix (S	54)		Redox Depress	ions (F8)			A6) (MLRA 144A, 145, 149B)
Sandy Re	dox (S5)						Red Parent Mate	
	Matrix (S6)							ark Surface (TF12)
Dark Surf	ace (S7) (LRF	R R, MLRA	A 149B)				Other (Explain i	n Remarks)
³ Indicators o	f hydrophytic	vegetatio	n and wetla	nd hydrology must be p	resent, unless dis	turbed or probl	ematic.	
Restrictive L	aver (if obs	erved):						
Type: b	•							
Depth (inc							Hydric Soil Present?	? Yes ● No ○
Remarks:								
Remarks.								

Project/Site: Antrim Wind Project	City/County:	Antrim	Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		State: N	Sampling Point: AN14 Upland
Investigator(s): AF JG	Section. To	wnship, Range: S.	T. R.
Landform (hillslope, terrace, etc.): Hillside		ncave, convex, none):	
Subregion (LRR or MLRA):	Lat.:	Long.:	
Soil Map Unit Name:			IWI classification:
		<u> </u>	
Are climatic/hydrologic conditions on the site ty	,	(explain in Remarks.)
Are Vegetation, Soil, or Hydrol	ogy Significantly disturbed?	Are "Normal Circun	nstances" present? Yes S NO C
Are Vegetation , Soil , or Hydrol	ogy naturally problematic?	(If needed, explain	any answers in Remarks.)
Summary of Findings - Attach site		oint locations, tra	ansects, important features, etc.
Hydrophytic Vegetation Present? Yes	No •		
Hydric Soil Present? Yes	within	Sampled Area a Wetland? Yes	○ No ●
Wetland Hydrology Present? Yes	No •		
Remarks: (Explain alternative procedures here	or in a separate report.)		
logged upland			
3300 0100			
Hydrology			
Wetland Hydrology Indicators:		Second	dary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)	Su	urface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	D	rainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	M	oss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	D	ry Season Water Table (C2)
Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	Cı	rayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living	Roots (C3)	aturation Visible on Aerial Imagery (C9)
☐ Drift deposits (B3)	Presence of Reduced Iron (C4)	☐ St	unted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils	(C6) G	eomorphic Position (D2)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ SI	nallow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	□ м	icrotopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)		F/	AC-neutral Test (D5)
Field Observations: Surface Water Present? Yes No No	Depth (inches):		
	Depth (inches):	Wetland Hydrology	Present? Yes No 💿
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):		
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previous ins	pections), if available:	
Remarks:			

	lants		ominant pecies?		Sampling Point: AN14 Upland						
ree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test w						
Picea rubens	20	✓	50.0%	FACU	Number of Dominant That are OBL, FACW			1	(A)		
Populus tremula	00	~	50.0%	FACU		,	-		()		
			0.0%		Total Number of Don			4	(D)		
	0		0.0%		Species Across All St	rata:	-		(B)		
	0		0.0%		Percent of domina			25.00/			
	0		0.0%		That Are OBL, FAC	CW, or FA	C:	25.0%	(A/B		
	0		0.0%		Prevalence Index v	vorksheet	:				
		= Tc	otal Cove	er	Total % Cov		Multiply	y by:			
Sapling/Shrub Stratum (Plot size: 15')					OBL speci es	0	x 1 =	0			
Acer pensylvanicum	40	✓	83.3%	FACU	FACW species	0	x 2 =	0			
Acer saccharum			16.7%	FACU-	FAC species	30	x 3 =	90			
3	0		0.0%		FACU species	93	x 4 =	372	-		
·			0.0%		UPL species	0	x 5 =	0			
·			0.0%		Column Totals:	123	(A)	462	- (B)		
). 	0		0.0%					-	_		
·		 _ Te	otal Cove		Prevalence In	dex = B/P	. = _	3.756			
lerb Stratum (Plot size: 5')	48	= 10	otal Cove	; i	Hydrophytic Vegeta						
1.Thelypteris noveboracensis	25	✓	71.4%	FAC	Rapid Test for	•		tation			
2.Aralia nudicaulis			14.3%	FACU	Dominance Te						
3. Trientalis borealis			14.3%	FAC	Prevalence In						
4.			0.0%		Morphologica data in Rema	l Adaptati	ons ¹ (Pr	ovide supp	orting		
5.	0		0.0%		Problematic H		•	•	lain)		
6.			0.0%			iyaropiiyt	ic vegeta	tion (Exp	,iaiii,		
7.			0.0%		1 Indicators of hy	¹ Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.					
8.	0		0.0%		be present, unless	disturbed	or probl	ematic.			
9.	0		0.0%		Definitions of Ve	egetatio	n Strata	:			
0.	0		0.0%		Tree - Woody plan	te 3 in <i>(</i> 7	' 6 cm) oi	r more in d	liamete		
1.	0		0.0%		at breast height (D				iiaiiict		
2.	0		0.0%		<u> </u>						
Noody Vine Stratum (Plot size:)	35	= Tc	otal Cove	er	Sapling/shrub - Wo greater than 3.28 f			an 3 in. DE	3H and		
	0		0.0%		Herb - All herbace	oue (non-	woody) ni	ante rega	rdlace		
1			0.0%		size, and woody pl				uitss		
2			0.0%								
3			0.0%		Woody vine - All w height.	oody vine	s greater	than 3.28	ft in		
4		ا - - _	otal Cove		neight.						
	0	- 10	nai COVE	; I							
					Hydrophytic Vegetation Present? Ye	es O	lo				

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN14 Upland

Depth (inches) Color (moist) % Color (moist) % Type Loc² Texture Remarks	
0-5 10YR 3/2 100% Sandy Loam	
5-10 2.5Y 5/3 100% Loamy Sand	
¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ² Location: PL=Pore Lining. M=Matrix	
	3
Historial (A1) Debuglio Polow Surface (S9) (LDD D	
High Feinodon (A2) MLRA 149B)	
□ Plack Histic (A2) □ Thin Dark Surface (S9) (LRR R, MLRA 149B) □ Coast Prairie Redux (A16) (LRR R, L, R, R)	
Loamy Mucky Mineral (F1) LRR K, L)	₹)
Dark Surface (S7) (LRR K, L)	
Depleted Matrix (F3) Depleted Matrix (F3)	
Thin Dark Surface (A12) Redox Dark Surface (F6) Thin Dark Surface (S9) (LRR K, L)	
☐ Popleted Park Surface (F12) ☐ Iron-Manganese Masses (F12) (LRR K, L, I	₹)
Peday Personians (F0) Piedmont Floodplain Soils (F19) (MLRA 14'	9B)
☐ Sailuy Geyed Malitx (34) ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149	B)
Sandy Redox (S5) Red Parent Material (TF2)	
☐ Stripped Matrix (S6) ☐ Very Shallow Dark Surface (TF12)	
☐ Dark Surface (S7) (LRR R, MLRA 149B) ☐ Other (Explain in Remarks)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
Postrictive Laver (if observed)	
Restrictive Layer (if observed):	
Type: Hudrig Soil Procent? No	
Type: Hydric Soil Present? Yes O No •	
Type: Hudrig Sail Procent? No	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	
Type: Hydric Soil Present? Yes O No •	



AN14 Wetland



AN14 Upland

Project/Site: Antrim Wind Project		City/County: Antrim	!	Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energ	gy, LLC	Sta	te: NH	Sampling Point: an15 wetland
Investigator(s): AF JG		Section, Township, Range:		 R.
Landform (hillslope, terrace, etc.): Hil	 Ilside	Local relief (concave, convex, r		Slope: 8.0 % / 4.6 °
Subregion (LRR or MLRA):	Lat.:	Long	-	Datum:
	Lat	Long		
Soil Map Unit Name:			NWI classific	ation: PSS
Are climatic/hydrologic conditions on the	he site typical for this time of y	ear? Yes No	(If no, explain in F	*
Are Vegetation \square , Soil \square , α	or Hydrology $\ \square$ significant	ly disturbed? Are "Normal	Circumstances" pr	esent? Yes No
Are Vegetation, Soil, o	or Hydrology 🗌 naturally p	oroblematic? (If needed,	explain any answer	s in Remarks.)
Summary of Findings - Atta	ch site map showing s	sampling point location	s, transects,	important features, etc.
	Yes No			
3	Yes O No O	Is the Sampled Area within a Wetland?	Yes ● No ○	
Wetland Hydrology Present?	Yes No			
Hydrology				
Wetland Hydrology Indicators:			Coopedany Indicator	(minimum of 2 required)
Primary Indicators (minimum of one r	required: check all that apply)		Surface Soil Cra	s (minimum of 2 required)
Surface Water (A1)	Water-Stained Lea	aves (B9)	Drainage Patter	
✓ High Water Table (A2)	Aquatic Fauna (B1	, ,	Moss Trim Line	
✓ Saturation (A3)	Marl Deposits (B15		Dry Season Wa	
Water Marks (B1)	Hydrogen Sulfide (Odor (C1)	Crayfish Burrow	rs (C8)
Sediment Deposits (B2)	Oxidized Rhizosph	eres along Living Roots (C3)	Saturation Visib	le on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduc	ced Iron (C4)		ssed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduc	ction in Tilled Soils (C6)	Geomorphic Po	
☐ Iron Deposits (B5)☐ Inundation Visible on Aerial Imagery (E	☐ Thin Muck Surface	` '	Shallow Aquitar	
Sparsely Vegetated Concave Surface (E	U Other (Explain in t	Remarks)	✓ Microtopograph ✓ FAC-neutral Tes	
Field Observations: Surface Water Present? Yes	No Depth (inches):			
	-			
Water Table Present? Yes Yes	No Depth (inches):	5Wetland Hydr	ology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	No Depth (inches):	0	ology Fresent:	103 0 110 0
Describe Recorded Data (stream gaug Remarks:	je, monitoring well, aerial photo	os, previous inspections), if avai	able:	

VEGETATION -	Use scientific	names of	plants
---------------------	----------------	----------	--------

Dominant	
Species?	

Tree Stratum (Plot size:)	Absolute % Cover		el.Strat. over	Indicator Status	Dominance Test worksheet:
				Status	Number of Dominant Species
1			0.0%		That are OBL, FACW, or FAC: 3 (A)
2	0		0.0%		Total Number of Dominant
3	0	Н	0.0%		Species Across All Strata: 3 (B)
4		Н	0.0%		Demonstration of the selection of the selection
5	0		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:100.0% (A/B)
6			0.0%		That his obe, thow, of the
7	0	Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0 :	= To	otal Cove	r	Total % Cover of: Multiply by:
1 Spinore toppopters	66	~	81.5%	FACW	0BL speci es28 x 1 =28
2 Acces michanism	10		12.3%	FAC	FACW species 104 x 2 = 208
2 Facultura manuschuseles			6.2%	FACW	FAC species
			0.0%	171011	FACU species $0 \times 4 = 0$
			0.0%		UPL speci es x 5 =0
5	0		0.0%		Column Totals: 142 (A) 266 (B)
6	0		0.0%		
7		т.	otal Cove		Prevalence Index = B/A = 1.873
Herb Stratum (Plot size: 5')	81	= 10	otai Cove	ſ	Hydrophytic Vegetation Indicators:
1.Carex lurida	20	V	32.8%	OBL	Rapid Test for Hydrophytic Vegetation
2. Eupatoriadelphus dubius		\Box	8.2%	FACW	✓ Dominance Test is > 50%
3. Scirpus cyperinus			4.9%	FACW+	✓ Prevalence Index is ≤3.0 ¹
4. Onoclea sensibilis	25	✓	41.0%	FACW	Morphological Adaptations ¹ (Provide supporting
5.Carex crinita	8		13.1%	OBL	data in Remarks or on a separate sheet)
6		\Box	0.0%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
		П	0.0%		¹ Indicators of hydric soil and wetland hydrology must
7 <u>.</u> 8.	0	\vdash			be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
10.			0.0%		
10 <u>. </u>			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11 <u>. </u>	0		0.0%		at breast height (DBH), regardless of height.
12	0	\Box	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	61	= To	otal Cove	r	greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0	\Box	0.0%		size, and woody plants less than 3.28 ft tall.
2	0	\Box	0.0%		
4	0	\Box	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
4			otal Cove	-	noight.
		= 10	otal Cove	l	
					Hydrophytic
					Vegetation Var A Na O
					Present? Yes No U
Remarks: (Include photo numbers here or on a separate she	eet.)				

Sampling Point: an15 wetland

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an15 wetland

	ription: (Des		the depth	needed to d				nfirm the	absence of indicators.)	
Depth (inches)	. Color (ı	Matrix moist)	_ %	_ Color (ı		dox Featu %	res Type 1	Loc²	Texture	Remarks
0-8	10YR	3/2	100%	33/01 (1					Loam	
8-12	2.5Y	4/1	90%	10YR	4/6	10%	C		Sandy Loam	
8-12	2.51	4/1	90%	TUTK	4/0	10%		IVI	Sandy Loam	
										_
										_
									-	
¹ Type: C=Con	ncentration. D	=Depletio	on. RM=Red	uced Matrix, (CS=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=	Matrix
Hydric Soil	Indicators:								Indicators for Prof	elematic Hydric Soils: 3
Histosol ((A1)			Poly	alue Belov	w Surface ((S8) (LRR F	₹,) (LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)				A 149B)	(00) (1)		lox (A16) (LRR K, L, R)
Black His	tic (A3)					ace (S9) (I				t or Peat (S3) (LRR K, L, R)
_	n Sulfide (A4)					Mineral (F1			Dark Surface (S7	
	Layers (A5)				eted Matri	Matrix (F2)			Polyvalue Below	Surface (S8) (LRR K, L)
_	Below Dark S		(11)			rface (F6)			Thin Dark Surfac	e (S9) (LRR K, L)
_	rk Surface (A					Surface (F	7)		Iron-Manganese	Masses (F12) (LRR K, L, R)
	uck Mineral (S				x Depress		,		Piedmont Floodp	lain Soils (F19) (MLRA 149B)
Sandy Re	eyed Matrix (54)				,				A6) (MLRA 144A, 145, 149B)
	Matrix (S6)								Red Parent Mate	
	face (S7) (LRI	RR MIRA	\ 149R)							rk Surface (TF12)
									Other (Explain in	Remarks)
³ Indicators o	f hydrophytic	vegetatio	on and wetla	nd hydrology	must be p	resent, un	less disturi	ed or probl	ematic.	
Restrictive L	-	erved):								
Type: R									Hydric Soil Present?	Yes ● No ○
Depth (inc	thes):_12								Hydric Soil Present?	Yes S No C
Remarks:										

Project/Site: Antrim Wind Project	City/County	: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Stat	te: NH	Sampling Point: an15 upland
Investigator(s): AF JG	Section.	Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.): Hillside		(concave, convex, n		Slope: 8.0 % / 4.6 °
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
			-	
Soil Map Unit Name:			NWI classifi —	cation:
Are climatic/hydrologic conditions on the site ty	pical for this time of year?	res ● No ○	(If no, explain in	· ·
Are Vegetation \square , Soil \square , or Hydrol	ogy significantly disturbed?	Are "Normal	Circumstances" p	resent? Yes • No O
Are Vegetation, Soil, or Hydrol	ogy naturally problematic?	(If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site	map showing sampling	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No •			
Hydric Soil Present? Yes		he Sampled Area hin a Wetland?	Yes ○ No ●	
Wetland Hydrology Present? Yes	No •	init a Wotland.		
Remarks: (Explain alternative procedures her	e or in a senarate report)			
Hydrology				
Wetland Hydrology Indicators:			Secondary Indicato	rs (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)		Surface Soil Cr	racks (B6)
Surface Water (A1)	☐ Water-Stained Leaves (B9)		Drainage Patte	erns (B10)
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Line	, ,
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres along Livin	ng Roots (C3)		ble on Aerial Imagery (C9)
☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4)	Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	-11- (0()	Geomorphic P	essed Plants (D1)
Iron Deposits (B5)		Olis (Cb)	Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		Microtopograp	
Sparsely Vegetated Concave Surface (B8)	Uner (Explain in Remarks)		FAC-neutral Te	
Field Observations:				
Surface Water Present? Yes No •	Depth (inches):			
Water Table Present? Yes No •	Depth (inches):	_		
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	Wetland Hydr	ology Present?	Yes ○ No •
(includes capillally fringe)		noncations) if avail	abla	
Describe Recorded Data (stream gauge, monit	oring well, aerial priotos, previous i	rispections), ii avaii	able:	
Remarks:				

VEGETATION - Use scientific names of plan	nts		ominant		Sampling Point: an15 upland
	Absolute		ecies?	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		ver	Status	
1. Fagus grandifolia	25	~	41.7%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2. Fraxinus americana	25	✓	41.7%	FACU	
3. Betula alleghaniensis	10		16.7%	FAC	Total Number of Dominant Species Across All Strata: 4 (B)
4	0		0.0%		(e)
5	0		0.0%		Percent of dominant Species That Are ORL FACW or FAC: 25.0% (A/B)
6	0_		0.0%		That Are OBL, FACW, or FAC: 25.0% (A/B)
7			0.0%		Prevalence Index worksheet:
		= Tc	otal Cove	r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')					0BL species 0 x 1 = 0
1. Acer pensylvanicum	50	✓	83.3%	FACU	FACW species $0 \times 2 = 0$
2. Fagus grandifolia	5		8.3%	FACU	FAC species 15 x 3 = 45
3. Picea rubens	5		8.3%	FACU	FACU speci es 112 x 4 = 448
4	0		0.0%		UPL species $\frac{1}{x}$ x $5 = \frac{5}{x}$
5	0		0.0%		' (8)
<u>6</u>			0.0%		Column Totals: 128 (A) 498 (B)
7	0	Ш	0.0%		Prevalence Index = B/A = 3.891
Herb Stratum (Plot size: 5')	60	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
			10.50/	540 11	Rapid Test for Hydrophytic Vegetation
1.Fraxinus americana			12.5%	FACU	☐ Dominance Test is > 50%
2.Acer saccharum		✓	12.5%	FACU-	☐ Prevalence Index is ≤3.0 ¹
3. Malanthemum canadense	5		62.5%	FAC-	Morphological Adaptations ¹ (Provide supporting
4.Polygonatum pubescens 5.			12.5%	UPL	data in Remarks or on a separate sheet)
6.			0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
7.			0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.			0.0%		be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
10.			0.0%		
11.			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
12.			0.0%		at breast height (DBH), regardless of height.
<u> </u>		_	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	8	= Tc	otal Cove	r	greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.

____0 = Total Cover

Hydrophytic Vegetation Present?

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

Yes ○ No ●

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an15 upland

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)
Depth (inches)	. Color (ı	Matrix	_ %	Redox Features Color (moist) % Type 1 Loc2	Texture Remarks
0-8	10YR	3/2	100%	Color (moist) % Type 1 Loc2	Loam
8-16	10YR	4/3	100%		Fine Sandy Loam
¹ Type: C=Con	centration. D	=Depletion	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix
Hydric Soil I	Indicators:				Indicators for Problematic Hydric Soils: 3
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hist				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
_	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Layers (A5)			Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
_	Below Dark S rk Surface (A1		11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
				Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
	uck Mineral (S eyed Matrix (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Re		54)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Material (TF2)
	face (S7) (LRI	R R, MLRA	149B)		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
3 Indicators of	f hydronhytic	voqotation	a and wotla	and hydrology must be present, unless disturbed or proble	
			i and wella	ind frydrology flidst be present, dilless disturbed of proble	manc.
Restrictive L	-	erved):			
Type: R					Hydric Soil Present? Yes ○ No ●
Depth (inc	:nes):_16				, , , , , , , , , , , , , , , , , , , ,
Remarks:					



AN15 Wetland



AN15 Upland

Project/Site: Antrim Wind Project			City/County	y: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable	Energy, LLC			Sta	te: NH	Sampling Point: an16 wetland
Investigator(s): AF JG			Section	, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Terrace		_	(concave, convex, r		Slope: 0.0% / 0.0°
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					-	
Soil Map Unit Name:					INVVI CIASSIII	cation: PEM
Are climatic/hydrologic conditions	on the site ty	pical for this time of y	ear?	Yes ● No ○	(If no, explain in	*
Are Vegetation . , Soil .	, or Hydrold	ogy 🗌 significant	ly disturbed	? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - A	ttach site	map showing s	ampling	point location	ıs, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes	No O				
Hydric Soil Present?	Yes 💿	No O		the Sampled Area thin a Wetland?	Yes ● No C	
Wetland Hydrology Present?	Yes 💿	No O				
Lludrolomy						
Hydrology						
Wetland Hydrology Indicators:	no roquirod.	abaak all that annly)				rs (minimum of 2 required)
Primary Indicators (minimum of c	ne requireu;		(00)		Surface Soil Co	
✓ High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		ring Roots (C3)		ble on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	-		Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled	Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Image		Other (Explain in F	Remarks)		Microtopograp	
Sparsely Vegetated Concave Surfa	ice (B8)				✓ FAC-neutral To	est (D5)
Field Observations:	<u> </u>					
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes		Depth (inches):	0	Wotland Hyde	rology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	● No ○	Depth (inches):	0		ology Present?	Tes C NO C
Describe Recorded Data (stream of	gauge, monito	oring well, aerial photo	os, previous	inspections), if avai	lable:	
Remarks:						

VEGETATION - Use scientific names of plan	Dominant
	Cmaaiaa?

Absolute Rel Stratu Monte Rel Stratu Monte Rel Stratu Monte Rel Stratu Robert Robe	VEGETATION - Use scientific fiames of pia	21115		minant ecies? _		Sampling Point: an16 wetland
	Total Characters (Plot size:		Rel	I.Strat.		Dominance Test worksheet:
0					status	
0	1		Н-			That are OBL, FACW, or FAC: 4 (A)
0	2		Н-			Total Number of Dominant
0	3		Н-			Species Across All Strata: 4 (B)
0	4		Н-			Percent of dominant Species
apling/Shrub Stratum (Plot size: 15')	•	0	Η-			
apling/shrub Stratum (Plot size: 15') 0 = Total Cover			H-			
Spriese alba	1		Ш_			
Spirace albe	Sapling/Shrub Stratum (Plot size: 15')		= To	tal Cover		133
Spirace tomentose	1. Spiraea alba	15	✓	50.0%	FACW+	· — —
0	O 6minus tomorphism	15	V	50.0%	FACW	
0				0.0%		1
0	4.	0		0.0%		raco species
O	5.	0		0.0%		UPL speci es x 5 =
Prevalence Index = B/A = 1.513 Prevalence Ind				0.0%		Column Totals: 113 (A) 171 (B)
Stratum (Plot size: 5') 30				0.0%		Prevalence Index = B/A = 1.513
Carex crinita			= To	tal Cover		
1. care crinita	Herb Stratum (PIOT SIZE: 5					
2. Scirpus cyperinus 3. Scirpus atrovirens 5	1_Carex crinita	50	V _	60.2%	OBL	
1. Scipus arrovirens	2. Scirpus cyperinus	5		6.0%	FACW+	
data in Remarks or on a separate sheet) 5. Impatiens capensis 6.	3. Scirpus atrovirens	5		6.0%	OBL	l <u> </u>
0	4. Onoclea sensibilis		✓ _	24.1%	FACW	data in Remarks or on a separate sheet)
7.	5. Impatiens capensis	3		3.6%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
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 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 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 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No		0		0.0%		
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 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No		0		0.0%		Indicators of hydric soil and wetland hydrology must
1.		0		0.0%		
1.	9	0		0.0%		Definitions of Vegetation Strata:
1.	10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes • No • N		0		0.0%		at breast height (DBH), regardless of height.
Sa	12	0		0.0%		Sanling/shrub - Woody plants less than 3 in DRH and
Under the control of	Weady Vine Stratum (Plot size)	83	= To	tal Cover		greater than 3.28 ft (1m) tall
Size, and woody plants less than 3.28 ft tall. O		•		0.007		Hart All barbaras (consults) also to account as a fi
Woody vine - All woody vines greater than 3.28 ft in height. O = Total Cover Hydrophytic Vegetation Present? Yes No						Herb - All nerbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
D = Total Cover Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Yes No						
O = Total Cover Hydrophytic Vegetation Present? Yes • No •	3					, , ,
Hydrophytic Vegetation Present? Yes No	4					neight.
Vegetation Present? Yes No			= To	tal Cover		
Vegetation Present? Yes No						
Vegetation Present? Yes No						
Tresent.						Vegetation V
emarks: (Include photo numbers here or on a separate sheet.)						Present? Yes S NO C
entains. (Include prioto numbers nere of on a separate sneet.)	Demarks: (Include photo numbers here or on a separate sh	neet)				
	Remarks. (Hierare prioto hambers here of off a separate si	icet. <i>j</i>				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an16 wetland

Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains **Location: PL=Pore Lining, M=Matrix Pydric Soil Indicators:		-	Matrix	_ %	Color (dox Featu		- 1002	- Toyture	Domestre
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains **Location: PL=Pore Lining, M=Matrix** **Pydric Soil Indicators:** Histosoi (A1)					Color (r	noist)		Type	LOC2	-	Remarks
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains PL=Pore Lining. M=Matrix											
Hydric Soil Indicators: Histosol (A1)	7-16	2.5Y	4/2	95%	10YR	4/6	5%	C	M	Fine Sandy Loam	<u> </u>
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)										-	
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1)											
Hydric Soil Indicators: Histosol (A1) Histo Epipedon (A2) Histo Epipedon (A10) Hist											
Hydric Soil Indicators: Histosol (A1) Histo Epipedon (A2) Histo Epipedon (A10) Hist											
Hydric Soil Indicators: Histosol (A1) Histo Epipedon (A2) Histo Epipedon (A10) Hist											
Hydric Soil Indicators: Histosol (A1)								_			
Histosol (A1)	Type: C=Con	centration. D	=Depletio	n. RM=Redu	iced Matrix, (CS=Cover	ed or Coat	ed Sand Gr	ins ² Loc	ation: PL=Pore Lining. M	=Matrix
Histosol (A1)			<u> </u>								
Histic Epipedon (A2) MLRA 149B) □ Coast Prairie Redox (A16) (LRR K, L, R) □ Black Histic (A3) □ Thin Dark Surface (S9) (LRR R, MLRA 149B) □ Stratified Layers (A5) □ Depleted Below Dark Surface (A11) □ Thick Dark Surface (A12) □ Depleted Dark Surface (F6) □ Sandy Muck Mineral (S1) □ Sandy Gleyed Matrix (S4) □ Sandy Redox (S5) □ Stripped Matrix (S6) □ Dark Surface (S7) (LRR K, L) □ Depleted Matrix (S6) □ Depleted Dark Surface (F8) □ Depleted Dark Surface (F8) □ Redox Depressions (F8) □ Red	_				Polyv	value Belo	w Surface	(S8) (LRR F			
Black Histic (A3)		•						() (•		
Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Muck Mineral (S1) Sandy Muck Mineral (S1) Sandy Redox Depressions (F8) Sandy Redox (S5) Extripped Matrix (S6) Depleted Matrix (S6) Depleted Dark Surface (S7) Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR K, L) Inon-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** **Restrictive Layer (if observed): Type: Depth (inches): Depth (inches): Hydric Soil Present? Yes • No • No • Inches (S7) (LRR K, L) Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L) Polyvalue Below Surface (S9) (LRR K, L) Polyvalue Below					Thin	Dark Surf	ace (S9) (LRR R, MLF	A 149B)		
Stratified Layers (A5) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Thick Dark Surface (A12) Sandy Muck Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No					Loam	ny Mucky I	Mineral (F1) LRR K, L)			
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Muck Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Thin Dark Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R) Peldmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Redox Depressions (F8) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Type: Depth (inches): Hydric Soil Present? Yes No										Dark Surface (S	67) (LRR K, L)
Thick Dark Surface (A12) Thick Dark Surface (A12) Sandy Muck Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 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 (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Type: Depth (inches): Hydric Soil Present? Yes No				11\				,		Polyvalue Belov	v Surface (S8) (LRR K, L)
Iron-Manganese Masses (F12) (LRR K, L, R)	_ '			111)						Thin Dark Surfa	ice (S9) (LRR K, L)
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Type: Depth (inches):	_	•	•					7)		☐ Iron-Manganes	e Masses (F12) (LRR K, L, R)
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No								')		Piedmont Flood	plain Soils (F19) (MLRA 149B)
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No			54)		□ Redo	ix Depress	SIULIS (FO)			Mesic Spodic (7	A6) (MLRA 144A, 145, 149B)
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No		dox (S5)								Red Parent Mat	erial (TF2)
Dark Surface (S7) (LRR R, MLRA 149B) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Depth (inches): Type: Depth (inches): Type: Depth (inches): Type: Depth (inches): Depth (inches): Type: Type: Depth (inches): Type: Depth (inches	Sandy Re	uon (00)									
Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No											
Restrictive Layer (if observed): Type: Depth (inches): Type: Depth (inches): Type: Depth (inches): Type: Depth (inches):	Stripped N	Matrix (S6)	R, MLRA	\ 149B)							
Type:	Stripped M Dark Surfa	Matrix (S6) ace (S7) (LRR			nd hydrology	must be a	present. ur	ıless disturk	ed or probl	Other (Explain	
Depth (inches): Hydric Soil Present? Yes No	Stripped M Dark Surfa 3Indicators of	Matrix (S6) ace (S7) (LRR f hydrophytic	vegetatio		nd hydrology	must be j	present, ur	ıless disturk	ed or probl	Other (Explain	
Depth (manes).	Stripped M Dark Surfa 3Indicators of Restrictive La	Matrix (S6) ace (S7) (LRR f hydrophytic	vegetatio		nd hydrology	must be p	present, ur	ıless disturt	ed or probl	Other (Explain	
Remarks:	Stripped M Dark Surfi 3Indicators of Restrictive La Type:	Matrix (S6) ace (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	ıless disturk	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfi 3Indicators of Restrictive La Type:	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be j	present, ur	iless disturk	ed or prob	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfi 3Indicators of Restrictive La Type:	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	iless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	ıless disturk	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	ıless disturk	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	ıless disturk	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of estrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Sestrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa 3Indicators of Restrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)
	Stripped M Dark Surfa Indicators of estrictive La Type: Depth (incl	Matrix (S6) face (S7) (LRR f hydrophytic ayer (if obse	vegetatio		nd hydrology	must be p	present, ur	oless disturb	ed or probl	Other (Explain lematic.	in Remarks)

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te:	Sampling Point: an16 upland
Investigator(s): AF JG	Sec	tion, Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.): Hillside		elief (concave, convex, r		Slope: 10.0 % / 5.7 °
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
				
Soil Map Unit Name:			NWI classif	ication:
Are climatic/hydrologic conditions on the site	typical for this time of year?	Yes ● No ○	(If no, explain in	· · · · · · · · · · · · · · · · · · ·
Are Vegetation \square , Soil \square , or Hyd	ology 🗌 significantly distu	rbed? Are "Normal	Circumstances" p	oresent? Yes • No ·
Are Vegetation, Soil, or Hyd	ology naturally problema	atic? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Attach si		ing point location	ıs, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes ○ No •)
Wetland Hydrology Present? Yes	No 💿			
Hydrology				
Wetland Hydrology Indicators:	d. abaak all that apply)			ors (minimum of 2 required)
Primary Indicators (minimum of one require Surface Water (A1)			Surface Soil C	
High Water Table (A2)	Water-Stained Leaves (B9)☐ Aquatic Fauna (B13)		☐ Drainage Patte ☐ Moss Trim Lin	
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres alon			ible on Aerial Imagery (C9)
☐ Drift deposits (B3)	Presence of Reduced Iron		Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in T	illed Soils (C6)	Geomorphic P	osition (D2)
Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface (B8)			FAC-neutral T	est (D5)
Field Observations:	N			
Surface Water Present? Yes No	· · · · · -			
Water Table Present? Yes No	Depth (inches):	Western dilleren		Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	wetiand Hydi	ology Present?	Tes UNU U
Describe Recorded Data (stream gauge, mod	itoring well, aerial photos, previ	ious inspections), if avai	able:	
Remarks:				
remarks.				

/EGETATION - Use scientific names of p	iuiita	Dominant Species?			Sampling Point: an16 upland		
Free Stratum (Plot size: 30')	Absolute % Cover	Re	I.Strat.	Indicator	Dominance Test worksheet:		
				Status	Number of Dominant Species		
Fagus grandifolia		✓ .	66.7%	FACU	That are OBL, FACW, or FAC: 0 (A)		
P. Betula papyrifera		✓.	33.3%	FACU	Total Number of Dominant		
3		Н.	0.0%		Species Across All Strata: 4 (B)		
·		∦.	0.0%		Percent of dominant Species		
j		Η.	0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)		
5		Η.	0.0%				
7		Ш.	0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')	30	= To	tal Cove	r	Total % Cover of: Multiply by:		
. Pinus strobus	10		19.6%	FACU	0BL species 0 x 1 = 0		
P. Fagus grandifolia	33	V	64.7%	FACU	FACW species $0 \times 2 = 0$		
Viburnum lentago			9.8%	FAC	FAC species $\frac{5}{2}$ x 3 = $\frac{15}{2}$		
. Picea rubens	3		5.9%	FACU	FACU speci es 106 x 4 = 424		
5.			0.0%		UPL species $\frac{80}{}$ x 5 = $\frac{400}{}$		
5.			0.0%		Column Totals: 191 (A) 839 (B)		
,	0		0.0%		Prevalence Index = $B/A = 4.393$		
		= To	tal Cove	r			
Herb Stratum (Plot size: 5')					Hydrophytic Vegetation Indicators:		
1.Rubus alumnus	10		9.1%	FACU-	Rapid Test for Hydrophytic Vegetation		
2. Dennstaedtia punctilobula	80	V	72.7%	UPL	☐ Dominance Test is > 50%		
3.Acer saccharum	5		4.5%	FACU-	Prevalence Index is ≤3.0 ¹		
4. Solidago canadensis	15		13.6%	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	0		0.0%				
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must		
8.	0		0.0%		be present, unless disturbed or problematic.		
9.	0		0.0%		Definitions of Vegetation Strata:		
0.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter		
1.	0		0.0%		at breast height (DBH), regardless of height.		
2.	0		0.0%				
	110	- To =	tal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall		
Noody Vine Stratum (Plot size:)					greater than 3.20 it (1111) tall		
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of		
2	0		0.0%		size, and woody plants less than 3.28 ft tall.		
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4	0		0.0%		height.		
	0	= To	tal Cove	r			
					Hydrophytic		
					Vegetation Present? Yes No No		

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

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an16 upland

Profile Desc	cription: (Desc	cribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		Matrix	_ 0,	Redox Features	- T : Demonto	
	Color (m		%	Color (moist) % Type 1 Loc²	Texture Remarks	
0-4	10YR	3/2	100%		Loam	
4-6	10YR	5/8	100%		Fine Sandy Loam	
				· — — — — — — — — — — — — — — — — — — —		
				. — — — — — — — — — — — — — — — — — — —		
				·		
				. — — — — — — — — — — — — — — — — — — —		
				·		
¹ Type: C=Co	ncentration. D=	:Depletio	n. RM=Rec	duced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=Matrix	
• • • • • • • • • • • • • • • • • • • •	Indicators:	•		<u> </u>	<u> </u>	
Histosol				Polyvalue Below Surface (S8) (LRR R,	Indicators for Problematic Hydric Soils: 3	
	oipedon (A2)			MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
Black His				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)	
	en Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
	d Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)	
		urfana (A	11\	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)	
	d Below Dark Su		.11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)	
	ark Surface (A12	•		Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)	
	luck Mineral (S1			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)	
	Sleyed Matrix (S	4)		Redux Depressions (10)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
	edox (S5)				Red Parent Material (TF2)	
	Matrix (S6)				☐ Very Shallow Dark Surface (TF12)	
☐ Dark Sui	rface (S7) (LRR	R, MLRA	149B)		Other (Explain in Remarks)	
³ Indicators	of hydrophytic \	/egetatio	n and wetla	and hydrology must be present, unless disturbed or proble	ematic.	
	Layer (if obse			3 33		
	stone refusal	iveu).				
					Hydric Soil Present? Yes No •	
Depth (in	iches): 6				103 0 110 0	
Remarks:						



AN16 Wetland



AN16 Wetland



AN17 Stream (associated with AN18 Wetland)

Project/Site: Antrim Wind Project	City/County: A	ntrim	Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		State: NH	Sampling Point: an18a wetland
Investigator(s): AF JG	Section, Tow	nship, Range: S.	T. R.
Landform (hillslope, terrace, etc.): Gulch or G		cave, convex, none): Co	
Subregion (LRR or MLRA):	Lat.:	Long.:	
Soil Map Unit Name:			/I classification: PSS
Are climatic/hydrologic conditions on the site ty	pical for this time of year? Yes	No (If no, ex	xplain in Remarks.)
Are Vegetation , Soil , or Hydro	ogy significantly disturbed?	Are "Normal Circumst	ances" present? Yes No
Are Vegetation, Soil, or Hydro	ogy naturally problematic?	(If needed, explain ar	ny answers in Remarks.)
Summary of Findings - Attach site	e map showing sampling poi	nt locations, tran	sects, important features, etc.
Hydrophytic Vegetation Present? Yes •	No O		
Hydric Soil Present? Yes Yes		ampled Area Wetland? Yes	No O
Wetland Hydrology Present? Yes	No O		
Remarks: (Explain alternative procedures her	e or in a separate report.)		
Hydrology			
Wetland Hydrology Indicators:			y Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;			ace Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)		nage Patterns (B10)
✓ High Water Table (A2)	Aquatic Fauna (B13)		s Trim Lines (B16)
Saturation (A3) Water Marks (B1)	Marl Deposits (B15)		Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)		fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Drift deposits (B3)	Oxidized Rhizospheres along Living RoPresence of Reduced Iron (C4)	` ′ —	ted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (morphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	_	low Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)		otopographic Relief (D4)
☐ Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remains)		neutral Test (D5)
Field Observations:			
Surface Water Present? Yes O No •	Depth (inches):		
Water Table Present? Yes • No •	Depth (inches): 7		
Saturation Present? (includes capillary fringe) Yes • No •	Depth (inches): 0	Wetland Hydrology Pre	esent? Yes • No O
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspe	ctions), if available:	
Remarks:			
itemarks.			

VEGETATION - Use scientific names of plan	nts		ominant pecies?		Sampling Point: an18a wetland
Tree Stratum (Plot size:	Absolute % Cover	Re		Indicator Status	Dominance Test worksheet:
1	0		0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2.	0		0.0%		
3.	0		0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
4.	0		0.0%		Species Across Air Strata.
5.	0		0.0%		Percent of dominant Species
6	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
7	0		0.0%		Prevalence Index worksheet:
	0	= To	otal Cove	 r	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')					0BL species 20 x 1 = 20
1. Salix nigra	10	✓	76.9%	FACW+	FACW species 79 x 2 = 158
2. Fraxinus pennsylvanica	0	Ш	0.0%	FACW	FAC species 0 x 3 = 0
3. Cornus stolonifera	3	✓	23.1%	FACW+	FACU species $0 \times 4 = 0$
4	0		0.0%		0 0
5	0		0.0%		UPL species x 5 =
6	0		0.0%		Column Totals: 99 (A) 178 (B)
7	0	Ш	0.0%		Prevalence Index = B/A = 1.798
Herb Stratum (Plot size: 5')	13	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
					Rapid Test for Hydrophytic Vegetation
1.Eupatoriadelphus dubius	0		0.0%	FACW	✓ Dominance Test is > 50%
2.Onoclea sensibilis	33	✓	38.4%	FACW	✓ Prevalence Index is ≤3.0 ¹
3. Scirpus cyperinus	8		9.3%	FACW+	☐ Morphological Adaptations ¹ (Provide supporting
4.Carex crinita	10		11.6%	OBL	data in Remarks or on a separate sheet)
5.Osmunda cinnamomea	25	✓	29.1%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
6.Carex lurida	10		11.6%	OBL	1
7	0	Ш	0.0%		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0	Ш	0.0%		Definitions of Vegetation Strata:
9	0		0.0%		Deminions of Vegetation Strata.
10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12	0	Ш	0.0%		Capling/abruh Waady plants loss than 2 in DBH and

86 = Total Cover

0__

0__

0

0.0%

0 = Total Cover

0.0%

0.0%

0.0%

height.

Hydrophytic Vegetation

Present?

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

Woody Vine Stratum (Plot size: _____)

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of

Woody vine - All woody vines greater than 3.28 ft in

Yes ● No ○

size, and woody plants less than 3.28 ft tall.

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an18a wetland

ype: C=Concentration. ydric Soil Indicators Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Thick Dark Surface (Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (L	:) : Surface (,		Color (moist) % Type Ty	RR R, MLRA 149B)	Indicators for Pr 2 cm Muck (A Coast Prairie I 5 cm Mucky P Dark Surface Polyvalue Beld Thin Dark Sur	Remarks alTuvial soils alTuv
ype: C=Concentration. ydric Soil Indicators Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Thick Dark Surface (Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (L Indicators of hydrophytestrictive Layer (if okator) Type: Depth (inches):	D=Depleti:	tion. RM=Redu	Polyvalue Below Surface (S8) (LMLRA 149B) Thin Dark Surface (S9) (LRR R, Loamy Mucky Mineral (F1) LRR Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7)	RR R, MLRA 149B)	gravelly sand gravelly sand Indicators for Pr 2 cm Muck (A Coast Prairie I 5 cm Mucky P Dark Surface Polyvalue Beld Thin Dark Sur	M=Matrix roblematic Hydric Soils: 3 10) (LRR K, L, MLRA 149B) Redox (A16) (LRR K, L, R) Peat or Peat (S3) (LRR K, L, R) (S7) (LRR K, L) ow Surface (S8) (LRR K, L) face (S9) (LRR K, L) ese Masses (F12) (LRR K, L, R)
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Stratified Layers (A5) Depleted Below Dark Thick Dark Surface (Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (Landicators of hydrophytestrictive Layer (if obtype: Depth (inches):) : Surface (/ A12)	(A11)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7)	K, L)	Dark Surface Polyvalue Belo Thin Dark Sur Iron-Mangane	(S7) (LRR K, L) DW Surface (S8) (LRR K, L) face (S9) (LRR K, L) ese Masses (F12) (LRR K, L, R)
Depleted Below Dark Thick Dark Surface (Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (Landicators of hydrophytestrictive Layer (if obtogened)	Surface (A A12)	(A11)	Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7)		Polyvalue Beld Thin Dark Sur Iron-Mangane	ow Surface (S8) (LRR K, L) face (S9) (LRR K, L) ese Masses (F12) (LRR K, L, R)
Thick Dark Surface () Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (L Indicators of hydrophyt estrictive Layer (if ob Type: Depth (inches):	A12)	(A11)	Redox Dark Surface (F6) Depleted Dark Surface (F7)		☐ Thin Dark Sur ☐ Iron-Mangane	face (S9) (LRR K, L) ese Masses (F12) (LRR K, L, R)
Sandy Muck Mineral Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (L ndicators of hydrophyt strictive Layer (if ob Type: Depth (inches):	•		Depleted Dark Surface (F7)		Iron-Mangane	ese Masses (F12) (LRR K, L, R)
Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (L ndicators of hydrophyt strictive Layer (if ob Type: Depth (inches):	(S1)				_	
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (Lindicators of hydrophytestrictive Layer (if obtype: Depth (inches):	(31)		☐ Redox Depressions (F8)			Jupiani Julis (1 17) (MERA 1470)
Stripped Matrix (S6) Dark Surface (S7) (L Indicators of hydrophyt estrictive Layer (if ob Type: Depth (inches):	(S4)				Mesic Spodic	(TA6) (MLRA 144A, 145, 149B)
Dark Surface (S7) (L Indicators of hydrophyt estrictive Layer (if ob Type: Depth (inches):					Red Parent Ma	
Indicators of hydrophytestrictive Layer (if ob Type: Depth (inches):					Very Shallow	Dark Surface (TF12)
estrictive Layer (if ob Type: Depth (inches):	RR R, MLR	RA 149B)			Other (Explain	n in Remarks)
Type: Depth (inches):	ic vegetati	tion and wetlan	nd hydrology must be present, unless di	sturbed or proble	ematic.	
Type: Depth (inches):	served):	:				
	•					
					Hydric Soil Presen	nt? Yes 💿 No 🔾
Citia K3.						

	City/County: Antrim	Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC	St	ate: NH Sampling Point: an18a upland
Investigator(s): AF JG	Section, Township, Range:	
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex,	
Subregion (LRR or MLRA): Lat.:	Lor	
Soil Map Unit Name:		NWI classification:
Are climatic/hydrologic conditions on the site typical for this time of	year? Yes 🍑 No 🔾	(If no, explain in Remarks.)
Are Vegetation \square , Soil \square , or Hydrology \square significan	tly disturbed? Are "Norma	ıl Circumstances" present? Yes ● No ○
Are Vegetation $\ \ \Box \ \ $, Soil $\ \ \Box \ \ $, or Hydrology $\ \ \Box \ \ $ naturally	problematic? (If needed,	explain any answers in Remarks.)
Summary of Findings - Attach site map showing	sampling point locatio	ns, 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 ●		
Hydrology		
Hydrology		
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)
Surface Water (A1) Water-Stained Le	aves (DO)	Surface Soil Cracks (B6) Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B	• •	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B1		Dry Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide		Crayfish Burrows (C8)
	• •	Saturation Visible on Aerial Imagery (C9)
Sediment Deposits (B2) Oxidized Rhizospl	neres along Living Roots (C3)	
☐ Sediment Deposits (B2) ☐ Oxidized Rhizospl☐ Drift deposits (B3) ☐ Presence of Redu		Stunted or Stressed Plants (D1)
☐ Drift deposits (B3) ☐ Presence of Redu		Stunted or Stressed Plants (D1) Geomorphic Position (D2)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surfac	iced Iron (C4) action in Tilled Soils (C6)	Geomorphic Position (D2) Shallow Aquitard (D3)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surfac □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in	iced Iron (C4) iction in Tilled Soils (C6) e (C7)	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surfac	iced Iron (C4) iction in Tilled Soils (C6) e (C7)	Geomorphic Position (D2) Shallow Aquitard (D3)
Drift deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Presence of Redu Recent Iron Redu Thin Muck Surface Other (Explain in	oced Iron (C4) action in Tilled Soils (C6) e (C7) Remarks)	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surfac □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No ● Depth (inches):	oced Iron (C4) action in Tilled Soils (C6) e (C7) Remarks)	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surfac □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): Water Table Present? Yes □ No □ Depth (inches):	ced Iron (C4) action in Tilled Soils (C6) e (C7) Remarks)	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches):	ced Iron (C4) Iction in Tilled Soils (C6) e (C7) Remarks) Wetland Hyd	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present?	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photon	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches):	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photon)	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photon)	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photon)	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No
□ Drift deposits (B3) □ Presence of Redu □ Algal Mat or Crust (B4) □ Recent Iron Redu □ Iron Deposits (B5) □ Thin Muck Surface □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ○ No ○ Depth (inches): Water Table Present? Yes ○ No ○ Depth (inches): Saturation Present? Yes ○ No ○ Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photon)	ced Iron (C4) Iction in Tilled Soils (C6) Iction in Tilled	Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-neutral Test (D5) drology Present? Yes No

VEGETATION - Use scientific names of plants	Dominant Species?		Sampling Point:	an18a u
Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:	

VEGETATION - Use scientific names of plants Dominant Species?						Sampling Point: an18a upland				
Tree Stratum (Plot size:)	Absolute % Cover	Re	-	Indicator Status	Dominance Test worksheet:					
			· ·	Status		ber of Dominar			1	(4)
1	0 0		0.0%		That	are OBL, FACV	V, or FAC:	-	1	(A)
2		Н	0.0%			I Number of Do			_	
3		\Box	0.0%		Spec	cies Across All S	strata:	-	2	(B)
4 5	0	Н	0.0%		Perd	cent of domin	ant Specie	S		
6	0	\Box	0.0%		That Are OBL, FACW, or FAC: 50.0% (A/B)					
7	0	П	0.0%		Prevalence Index worksheet:					
		 = To	otal Cover		'''	Total % Co		Multiply	bv:	
Sapling/Shrub Stratum (Plot size:)			otal cover		OBL	speci es	0	x 1 =	0	_
1	0		0.0%		l	speci es	50	x 2 =	100	
2	0		0.0%		1	speci es	0	x 3 =	0	
3	0		0.0%		1	speci es	8		32	
4	0		0.0%		l	speci es	50	x 5 =	250	
5			0.0%		l	-	108		382	(B)
6			0.0%		Coru	mn Totals:		(A)		(6)
7	0	Ш	0.0%			Prevalence II	ndex = B/A	· = _	3.537	
Herb Stratum (Plot size: 5')		= To	otal Cover	Ē	Hydr	rophytic Vege	tation Indi	cators:		
1 Mariana	50	~	46.3%	FACW+		Rapid Test fo	or Hydroph	ytic Veget	ation	
2. Dennstaedtia punctilobula	50	V	46.3%	UPL		Dominance 1	Test is > 50)%		
3. Solidago canadensis	8		7.4%	FACU		Prevalence I	ndex is ≤3	. 0 ¹		
4.	0	\Box	0.0%			Morphologic data in Rema	al Adaptati	ons ¹ (Pro	ovide supp	orting
5.	0		0.0%		lп	Problematic				lain)
6.	0		0.0%			Problematic	пушорпус	c vegetat	поп (Ехр	iaiii)
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must				y must	
8.	0		0.0%		be present, unless disturbed or problematic.					
9.	0		0.0%		Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.					
10.	0		0.0%						ameter	
11	0		0.0%							
12	0		0.0%		Sanl	ing/shrub - W	loody plan	te loce the	n 2 in DB	∐ and
Woods Vino Strature / Diet size	108	= To	otal Cover	-		ter than 3.28			an 3 m. DD	i i and
Woody Vine Stratum (Plot size:)	0		0.00/		Llamba	All barbase		ام (براہ مورب		dlaga of
1			0.0%			o - All herbace , and woody p				aless of
2 3	0		0.0%							
4	0	\Box	0.0%		Woo	ody vine - All \ ht	woody vine	s greater	than 3.28	rt in
т		 = To	otal Cover							
			otal cover							
						Irophytic				
						etation sent?	res 🔾 🗈 l	1o 💿		
Remarks: (Include photo numbers here or on a separate she	et)				•					
remarks. (morade priote nambers here of on a separate she	,									

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an18a upland

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)
Depth (inches)	" Color (Matrix	_ %	Redox Features Color (moist) % Type 1 Loc²	Taytura
	Color (I			Color (moist) % Type 1 Loc2	Texture Remarks
0-10	10YR	3/2	100%		Sandy Loam
10-20	10YR	4/4	100%		Sandy Loam
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix
Hydric Soil I	Indicators:				Indicators for Problematic Hydric Soils: 3
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hist	tic (A3)			☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7) (LRR K, L)
	Layers (A5)			Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	Below Dark S		11)	Redox Dark Surface (F6)	☐ Thin Dark Surface (S9) (LRR K, L)
	k Surface (A			Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
	uck Mineral (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
	eyed Matrix (S4)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Re	Matrix (S6)				Red Parent Material (TF2)
	face (S7) (LRI	R MIRA	149R)		☐ Very Shallow Dark Surface (TF12)
					Other (Explain in Remarks)
Indicators o	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble	ematic.
Restrictive L	ayer (if obs	erved):			
Type:					Hydric Soil Present? Yes ○ No ●
Depth (inc	hes):				riyunc 3011 Fresent: Yes C NO G
Remarks:					



AN18a Wetland



AN18a Upland

Project/Site: Antrim Wind Project			City/County:	Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	te: NH	Sampling Point: an18b wetland
Investigator(s): AF JG			Section.	Γownship, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Hillside		_	concave, convex, n		
Subregion (LRR or MLRA):		Lat.:		Long	<u></u>	Datum:
						-
Soil Map Unit Name:					— INWI CIASSIII	cation: PSS
Are climatic/hydrologic conditions of	on the site typ	pical for this time of y	ear? Y	es No	(If no, explain in	
Are Vegetation, Soil	, or Hydrolo	ogy 🗌 significant	ly disturbed?	Are "Normal	Circumstances" p	resent? Yes • No C
Are Vegetation, Soil	, or Hydrolo	ogy 🗌 naturally p	problematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At	tach site	map showing s	sampling p	ooint location	ıs, transects,	important features, etc.
Hydrophytic Vegetation Present?		No O				
Hydric Soil Present?		No O		ne Sampled Area nin a Wetland?	Yes 💿 No 🔾	
Wetland Hydrology Present?	Yes 💿	No O				
Lludrology						
Hydrology						
Wetland Hydrology Indicators:		المراسمة فمطلع الممارية				rs (minimum of 2 required)
Primary Indicators (minimum of or Surface Water (A1)	ie requirea; o		(20)		Surface Soil Cr	
High Water Table (A2)		✓ Water-Stained Lea☐ Aquatic Fauna (B1			✓ Drainage Patte Moss Trim Line	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		a Roots (C3)		ble on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	-	ig 1.0013 (03)		essed Plants (D1)
☐ Algal Mat or Crust (B4)		Recent Iron Reduc		oils (C6)	Geomorphic Po	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface	e (C7)		Shallow Aquita	rd (D3)
Inundation Visible on Aerial Image	•	Other (Explain in F	Remarks)		Microtopograp	
Sparsely Vegetated Concave Surface	:e (B8)				✓ FAC-neutral Te	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):	-	_		
Water Table Present? Yes	No ●	Depth (inches):				Yes No
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches):	0	Wetland Hydr	ology Present?	Yes ♥ NO ∪
Describe Recorded Data (stream g	auge, monito	ring well, aerial photo	os, previous ir	nspections), if avail	lable:	
Danie and a						
Remarks:						

VEGETATIO	ON - Use scie	entific names of	plants	Dominant Species?		Sampling Point:	an18b wetland
			Absolute	Rel.Strat.	Indicator	Dominance Test worksheet:	
Troc Stratum	(Plot size:	1	% Cover	Cover	Ctatue		

	Absolute		pecies? _ el.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover			Status	Dominance rest worksheet.
			1		Number of Dominant Species
1	0		0.0%		That are OBL, FACW, or FAC: 4 (A)
2	0	Ш	0.0%		Total Number of Dominant
3	0		0.0%		Species Across All Strata: 4 (B)
4	0		0.0%		
5.	0		0.0%		Percent of dominant Species
<u> </u>	0	$\overline{\Box}$	0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
	0				
7		ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	0	= T	otal Cover		Total % Cover of: Multiply by:
	20	✓	1 ,,,,,,,,	EA 014/	OBL species 35 x 1 = 35
1. Spiraea tomentosa	33			FACW	FACW species 148 x 2 = 296
2. Fraxinus pennsylvanica	15	✓	31.3%	FACW	FAC species $0 \times 3 = 0$
3			0.0%		
4	0		0.0%		
5			0.0%		UPL speci es x 5 =0
6.			0.0%		Column Totals: 183 (A) 331 (B)
7	0		0.0%		1 200
·		_			Prevalence Index = B/A = 1.809
Herb Stratum (Plot size: 5')	48	= T	otal Cover		Hydrophytic Vegetation Indicators:
			1		Rapid Test for Hydrophytic Vegetation
1 .Onoclea sensibilis		Ш	14.8%	FACW	✓ Dominance Test is > 50%
2.Osmunda cinnamomea	5	Ш	3.7%	FACW	✓ Prevalence Index is ≤3.0 ¹
3.Carex trisperma	15		11.1%	OBL	I _
4.Carex lurida	20		14.8%	OBL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5 Dubus bisnidus	50	✓		FACW	
6 4-4		✓			☐ Problematic Hydrophytic Vegetation ¹ (Explain)
	25			FACW	1 -
7	0		0.0%		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	0		0.0%		
9	0		0.0%		Definitions of Vegetation Strata:
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11.	0		0.0%		at breast height (DBH), regardless of height.
12.	0	\Box	0.0%		
12.		_			Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	135	= 10	otal Cover		greater than 3.28 ft (1m) tall
4	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
1					size, and woody plants less than 3.28 ft tall.
2	0		0.0%		ones, and mostly plante loss than ones it tam
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.
	0	= T	otal Cover		
					Hadaankadia
					Hydrophytic Vegetation
					Present? Yes • No
D	-4.				
Remarks: (Include photo numbers here or on a separate she	et.)				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an18b wetland

Depth (inches)	. Color (r	Matrix	- %	Color (ı		dox Featu %	res Type 1	_ Loc²	Texture	Remarks			
			70	Color (i	noist)		- Type	LOC-		Remarks			
0-9	10YR	3/2							Fine Sandy Loam				
9-13	2.5Y	4/2	85%	10YR	5/8	15%	С	М	Fine Sandy Loam				
									-				
									-				
									-				
									-				
Type: C=Con	centration. D	=Depletic	n. RM=Redu		CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=N				
Hydric Soil										ematic Hydric Soils : 3			
Histosol (Poly	alue Belo	w Surface ((S8) (LRR F	2,					
Histic Epi	pedon (A2)			MLRA	A 149B)					(LRR K, L, MLRA 149B) ox (A16) (LRR K, L, R)			
Black His	ic (A3)					ace (S9) (I				or Peat (S3) (LRR K, L, R)			
Hydroger	Sulfide (A4)					Mineral (F1			Dark Surface (S7)				
Stratified	Layers (A5)					Matrix (F2)				Surface (S8) (LRR K, L)			
	Below Dark S		11)		eted Matri				☐ Thin Dark Surface (S9) (LRR K, L)				
	k Surface (A1	•				rface (F6)	7\			Masses (F12) (LRR K, L, R)			
	ıck Mineral (S				x Depress	Surface (F	/)		Piedmont Floodpla	nin Soils (F19) (MLRA 149B)			
	eyed Matrix (S	S4)		□ Reuc	x Depress	SIUTIS (FO)			Mesic Spodic (TA6	6) (MLRA 144A, 145, 149B)			
Sandy Re									Red Parent Materi	al (TF2)			
	Matrix (S6)	. D. MI D/	\ 140D\						Very Shallow Dark	Surface (TF12)			
	ace (S7) (LRF								Other (Explain in I	Remarks)			
³ Indicators o	f hydrophytic	vegetatio	on and wetla	nd hydrology	must be p	present, un	less disturk	ed or probl	ematic.				
Restrictive L	ayer (if obs	erved):											
Type: st	ony refuse												
Depth (inc	hes): 13								Hydric Soil Present?	Yes No			
Remarks:													

Project/Site: Antrim Wind Project	City/Coun	nty: Antrim	Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH Sampling Point: an18b upland
Investigator(s): AF JG	Sectio	on, Township, Range:	
Landform (hillslope, terrace, etc.): Hillside		ef (concave, convex, n	
Subregion (LRR or MLRA):	Lat.:	Long	j.: Datum:
Soil Map Unit Name:			NWI classification:
		Yes ● No ○	_
Are climatic/hydrologic conditions on the site ty	pical for this time of year?	Yes ♥ No ∪	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrol	ogy L significantly disturbe	ed? Are "Normal	Circumstances" present? Yes ● No ○
Are Vegetation , Soil , or Hydrol	ogy naturally problemation	c? (If needed, e	explain any answers in Remarks.)
Summary of Findings - Attach site		g point location	s, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No •		
Hydric Soil Present? Yes		s the Sampled Area vithin a Wetland?	Yes ○ No •
Wetland Hydrology Present? Yes	No •	vitimi a violiana.	
Remarks: (Explain alternative procedures here	or in a senarate report)		
Hydrology			
Wetland Hydrology Indicators:			Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required;	check all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)		Dry Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along L		Saturation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5)	Recent Iron Reduction in Tilled	d Soils (C6)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)		☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)		FAC-neutral Test (D5)
			(co)
Field Observations: Surface Water Present? Yes No No	Depth (inches):		
	Depth (inches):	Wetland Hydr	ology Present? Yes O No 💿
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):		
Describe Recorded Data (stream gauge, monitor	oring well, aerial photos, previou	is inspections), if avail	able:
Remarks:			

VEGETATION - Use scientific names of plan	nts		ominant pecies?		Sampling Point: an18b upland				
Tree Stratum (Plot size: 30')	Absolute	Re		Indicator	Dominance Test worksheet:				
	% Cover	✓		Status	Number of Dominant Species				
1. Fagus grandifolia	25	V	41.7%	FACU	That are OBL, FACW, or FAC: 2 (A)				
Tsuga canadensis Ables balsamea	<u>25</u> 10		41.7% 16.7%	FACU FAC	Total Number of Dominant				
	0		0.0%	FACU-	Species Across All Strata: 6 (B)				
4. Quercus rubra	0		0.0%	FACU-	Percent of dominant Species				
5 6	0		0.0%		That Are OBL, FACW, or FAC: 33.3% (A/B)				
	0		0.0%						
7		_			Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')	60	= To	otal Cove	r	Total % Cover of: Multiply by: OBL species 0 x 1 = 0				
1. Betula alleghaniensis	25	V	45.5%	FAC					
2. Acer saccharum	25	✓	45.5%	FACU-	17.011 Spool 65				
3. Pinus strobus	5		9.1%	FACU	FAC species $95 \times 3 = 285$				
4	0		0.0%		FACU speci es $\frac{113}{5}$ x 4 = $\frac{452}{25}$				
5.			0.0%		UPL species $\frac{5}{}$ x 5 = $\frac{25}{}$				
6.	0		0.0%		Column Totals: 213 (A) 762 (B)				
7.	0		0.0%		Prevalence Index = B/A = 3.577				
Herb Stratum (Plot size: 5')	55	5 = Total Cover		r	Hydrophytic Vegetation Indicators:				
					Rapid Test for Hydrophytic Vegetation				
1. Aralia nudicaulis	33	V	33.7%	FACU	☐ Dominance Test is > 50%				
2. Thelypteris noveboracensis	60	✓	61.2%	FAC	Prevalence Index is ≤3.0 ¹				
3. Polygonatum pubescens	5		5.1%	UPL	☐ Morphological Adaptations ¹ (Provide supporting				
4	0		0.0%		data in Remarks or on a separate sheet)				
5	0		0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)				
6	0		0.0%						
7	0	Ш	0.0%		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
8	0	Ш	0.0%						
9	0	Ш	0.0%		Definitions of Vegetation Strata:				
10	0	Ш	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11	0	Ш	0.0%		at breast height (DBH), regardless of height.				
12	0		0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and				
Woody Vine Stratum (Plot size:)	98	98 = Total Cover			greater than 3.28 ft (1m) tall				
1	0_		0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2	0		0.0%		size, and woody plants less than 3.28 ft tall.				
3.	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in				

0 = Total Cover

height.

Hydrophytic Vegetation Present?

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

Yes ○ No ●

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an18b upland

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)
Depth (inches)	. Color (ı	Matrix	_ %	Redox Features Color (moist) % Type 1 Loc²	Texture Remarks
0-7	10YR	3/2	100%	Color (moist) 78 Type 1 Loc-	Loam
7-14	10YR	4/3	100%		Fine Sandy Loam
¹ Type: C=Con	centration. D	=Depletion	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix
Hydric Soil	Indicators:				Indicators for Problematic Hydric Soils: 3
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black His				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
Stratifica Edycrs (AS)				Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
_	Below Dark S rk Surface (A1		11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
				Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
	uck Mineral (S eyed Matrix (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Re		54)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Material (TF2)
	face (S7) (LRI	R R, MLRA	149B)		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
3 Indicators o	f hydronhytic	voqotation	a and wotla	and hydrology must be present, unless disturbed or proble	
			i and wella	ind frydrology flidst be present, dilless disturbed of proble	erratic.
Restrictive L	•	erved):			
Type: Bo					Hydric Soil Present? Yes ○ No ●
Depth (inc	nes):_14				7 130 1 110 1
Remarks:					



AN18b Upland



AN18b Wetland



AN18 Wetland

Project/Site: Antrim Wind Project	City/County:	Antrim	Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Energy,	LLC	State: NH	Sampling Point: AN18c wetland
Investigator(s): AF JG	Section, To	wnship, Range: S.	 т. R.
Landform (hillslope, terrace, etc.): Hillsic		ncave, convex, none): ur	
Subregion (LRR or MLRA):	Lat.:	Long.:	Datum:
Soil Map Unit Name:			classification: PSS/PEM
	Vo		
Are climatic/hydrologic conditions on the same vegetation , Soil , or F	site typical for this time of year? lydrology significantly disturbed?	(11.110) 0.11	plain in Remarks.)
		Are "Normal Circumsta	F. 656
-	Hydrology naturally problematic?		y answers in Remarks.)
	site map showing sampling po	oint locations, trans	sects, important teatures, etc.
Hydrophytic Vegetation Present? Yes		Sampled Area	-
Hydric Soil Present? Yes	within	a Wetland? Yes	No O
Wetland Hydrology Present? Yes	● No ○		
Hydrology			_
Wetland Hydrology Indicators:			Indicators (minimum of 2 required)
Primary Indicators (minimum of one requestrated Surface Water (A1)			ce Soil Cracks (B6)
High Water Table (A2)	Water-Stained Leaves (B9)☐ Aquatic Fauna (B13)		age Patterns (B10) Trim Lines (B16)
✓ Saturation (A3)	Marl Deposits (B15)		eason Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		ish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres along Living		ation Visible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron (C4)	` ′	ed or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soil		norphic Position (D2)
☐ Iron Deposits (B5)	Thin Muck Surface (C7)		ow Aquitard (D3)
☐ Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Micro	topographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	_ , ,	✓ FAC-r	neutral Test (D5)
Field Observations:			
Curiaco Mator Moscilli	Depth (inches):		
Water Table Present? Yes No	Depth (inches):		w (a) w (
Saturation Present? (includes capillary fringe) Yes • No	Depth (inches): 0	Wetland Hydrology Pres	sent? Yes • No O
Describe Recorded Data (stream gauge,	monitoring well, aerial photos, previous ins	pections), if available:	
Remarks:			

VEGETATION - Use scientific names of pla	ants		ominant oecies?		Sampling Point: AN18c wetland		
Tree Stratum (Plot size:)	Absolute % Cover			Indicator Status	Dominance Test worksheet:		
1.	<u> </u>		0.0%	Status	Number of Dominant Species		
		Η.	0.0%		That are OBL, FACW, or FAC: 4 (A)		
2		Η.	0.0%		Total Number of Dominant		
3		H	0.0%		Species Across All Strata: 4 (B)		
4		H	0.0%		Percent of dominant Species		
5		Η.	0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)		
6		Η.	0.0%		Decorder to decorate to the set		
7					Prevalence Index worksheet: Total % Cover of: Multiply by:		
Sapling/Shrub Stratum (Plot size: 15')	0	= 10	otal Cover	-	1,3,3		
1. Acer rubrum	5	V	50.0%	FAC			
2. Fraxinus pennsylvanica	5	\checkmark	50.0%	FACW	FACW species $58 \times 2 = 116$		
3.	0		0.0%		FAC species $5 \times 3 = 15$		
4.	0		0.0%		FACU speci es x 4 =		
5.	0		0.0%		UPL species $0 \times 5 = 0$		
6.	0		0.0%		Column Total s: 99 (A) 167 (B)		
7.	0		0.0%		Prevalence Index = B/A = 1.687		
	10	= To	tal Cover	•	Hydrophytic Vegetation Indicators:		
Herb Stratum (Plot size: 5')		<u></u>			Rapid Test for Hydrophytic Vegetation		
1.Carex crinita	25	✓,	28.1%	OBL	✓ Dominance Test is > 50%		
2.Phalaris arundinacea	33	✓.	37.1%	FACW+	✓ Prevalence Index is ≤3.0 ¹		
3.Onoclea sensibilis	15		16.9%	FACW	Morphological Adaptations ¹ (Provide supporting		
4.Carex Iurida	8		9.0%	OBL	data in Remarks or on a separate sheet)		
5. Scirpus cyperinus	5	\sqcup	5.6%	FACW+	☐ Problematic Hydrophytic Vegetation ¹ (Explain)		
6.Carex trisperma	3	\sqcup	3.4%	OBL			
7	0	\square	0.0%		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
8	0	\square	0.0%		·		
9	0	\sqcup	0.0%		Definitions of Vegetation Strata:		
10	0	\sqcup	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter		
11.	0	\sqcup	0.0%		at breast height (DBH), regardless of height.		
12	0	\sqcup	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and		
Woods Vine Stretum (Diet size)	89	= To	otal Cover	-	greater than 3.28 ft (1m) tall		
Woody Vine Stratum (Plot size:)	•		0.607		I Hart All hart account for a second		
1		Н.	0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
2		<u> </u>	0.0%		S.E.S. and Woody plante 1000 than 0.20 it tail.		
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4		\square	0.0%		height.		

0 = Total Cover

Hydrophytic Vegetation

Present?

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

Yes ● No ○

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18c wetland

	ription: (Des		the depth	needed to d				nfirm the	absence of indicators.)			
Depth (inches)	Color (r	Matrix moist)	_ % -	_ Color (ı		dox Featu %	res Type 1	_ Loc²	Texture	Remarks		
0-6	10YR	3/2	100%	00/0/ (1			7,70		Fine Sandy Loam	.co.nurro		
6-14	2.5Y	4/1	90%		4/4	10%				=		
0-14		4/1	90%	TUYK	4/4	10%		IVI	Fine Sandy Loam			
										_		
									-	-		
									-			
									-			
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, (CS=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=1			
Hydric Soil I	Indicators:								Indicators for Prob	lematic Hydric Soils : 3		
Histosol ((A1)			Poly	alue Belov	w Surface ((S8) (LRR F	2,		(LRR K, L, MLRA 149B)		
Histic Epi	pedon (A2)				A 149B)	(60) (1	DD D 1415	A 440D)		lox (A16) (LRR K, L, R)		
	Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B)							or Peat (S3) (LRR K, L, R)				
	Hydrogen Sulfide (A4) Stratified Lavers (A5) Loamy Mucky Mineral (F1) LRR K, L) Loamy Gleyed Matrix (F2)						Dark Surface (S7) (LRR K, L)					
	Stratified Layers (A3)							Polyvalue Below Surface (S8) (LRR K, L)				
_	Depleted below bank surface (ATT)							Thin Dark Surface (S9) (LRR K, L)				
	Depleted Dark Surface (F7)								Masses (F12) (LRR K, L, R)			
	uck Mineral (S				x Depress		,			lain Soils (F19) (MLRA 149B)		
Sandy Re	eyed Matrix (\$	54)			·					.6) (MLRA 144A, 145, 149B)		
	Matrix (S6)								Red Parent Material (TF2) Very Shallow Dark Surface (TF12)			
_	ace (S7) (LRF	R R. MLRA	A 149B)									
									Other (Explain in	Remarks)		
³ Indicators of			n and wetta	na nyarology	must be p	resent, un	iess disturt	ea or probl	ematic.			
Restrictive L	•	erved):										
Type: Bo									Hydric Soil Present?	Yes ● No ○		
Depth (inc	hes): 14								Hydric 30ii Fresent:	Tes Sino C		
Remarks:												

Project/Site: Antrim Wind Project	City/Co	ounty: Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: AN18c upland
Investigator(s): AF JG	Sec	tion, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.): Hillside		elief (concave, convex, r		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):	Lat.:	Long		Datum:
			NWI classif	
Soil Map Unit Name:			— INVVI CIASSII	ication:
Are climatic/hydrologic conditions on the site	typical for this time of year?	Yes ● No ○	(If no, explain in	•
Are Vegetation , Soil , or Hyd	rology Significantly distu	rbed? Are "Normal	Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hyd	rology 🔲 naturally problem	atic? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Attach si		ing point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes ○ No •	
Wetland Hydrology Present? Yes	No 💿			
I landa da ma				
Hydrology				
Wetland Hydrology Indicators:	d, check all that apply)			ors (minimum of 2 required)
Primary Indicators (minimum of one require Surface Water (A1)			Surface Soil C Drainage Patte	
High Water Table (A2)	Water-Stained Leaves (B9)☐ Aquatic Fauna (B13)		Moss Trim Lin	
Saturation (A3)	Marl Deposits (B15)			dater Table (C2)
☐ Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burro	
Sediment Deposits (B2)	Oxidized Rhizospheres alor	•		ible on Aerial Imagery (C9)
Drift deposits (B3)	Presence of Reduced Iron	(C4)	Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in T	illed Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface (B8)			FAC-neutral T	est (D5)
Field Observations:				
Surface Water Present? Yes No				
Water Table Present? Yes No	Depth (inches):			Yes ○ No •
Saturation Present? (includes capillary fringe) Yes No	Depth (inches):	Wetland Hydi	ology Present?	Yes Uno S
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, prev	ious inspections), if avai	able:	
Demonto				
Remarks:				

/EGETATION - Use scientific names of pl			inant ies?		Sam	pling Po	int: AN	18c uplan	d
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.S	Strat.	Indicator Status	Dominance Test wor	ksheet:			
		_			Number of Dominant S			2	(4)
Acer rubrum			33.3%	FAC	That are OBL, FACW, o	or FAC:		2	(A)
Betula alleghaniensis			22.2%	FAC	Total Number of Domi	nant			
Picea rubens			22.2%	FACU	Species Across All Stra	ta:		8	(B)
_ Tsuga canadensis			22.2%	FACU	Percent of dominan	t Species			
			0.0%		That Are OBL, FACV			25.0%	(A/B
•			0.0%		·				
	0	Ш_	0.0%		Prevalence Index wo				
sapling/Shrub Stratum (Plot size: 15')	45	= Tota	I Cove	r	Total % Cover		Multipl		_
Acer pensylvanicum	20	V	14.4%	FACU	OBL species	0	x 1 =	0	-
Ouerous rubre	10	\Box	22.2%	FACU-	FACW species _	0	x 2 =	0	_
. Fagus grandifolia			11.1%	FACU	FAC speci es _	25	x 3 =	75	-
B. ()			22.2%	FACU	FACU species _	78	x 4 =	312	
			0.0%	TACO	UPL speci es _	50	x 5 =	250	_
	0		0.0%		Column Totals:	153	(A)	637	(B)
). 			0.0%		_			4.4.0	-
•					Prevalence Inde	•x = B/A	. =	4.163	
lerb Stratum (Plot size: 5')	45	= 10ta	I Cove	ſ	Hydrophytic Vegetat				
1.Dennstaedtia punctilobula	50	V	79.4%	UPL	Rapid Test for H	lydrophy	ytic Vege	tation	
2.Solidago canadensis		\neg	12.7%	FACU	Dominance Tes				
3.Rubus alumnus	5		7.9%	FACU-	Prevalence Ind				
4.			0.0%		Morphological A	Adaptati	ons ¹ (Pr	ovide supp	orting
5.		\neg	0.0%		data in Remark		-		
6.			0.0%		☐ Problematic Hy	aropnyti	c vegeta	tion - (Exp	olain)
7.			0.0%		1 Indicators of hydr	ic soil ar	nd wetlar	nd hydrolog	gy mus
8.			0.0%		be present, unless d	isturbed	or probl	ematic.	
9.			0.0%		Definitions of Veg	getation	n Strata	:	
0.		\neg	0.0%						
1.			0.0%		Tree - Woody plants at breast height (DB				liamete
2.			0.0%		at broadt noight (BB	1), 10ga	. 4.000 01	noigni.	
<u></u>			I Cove	- ———	Sapling/shrub - Woo				3H and
Noody Vine Stratum (Plot size:)		_ 10ta	COVE		greater than 3.28 ft (1m) tall.			
 1	0		0.0%		Herb - All herbaceou	ıs (non-v	voody) p	lants, rega	rdless
2	0		0.0%		size, and woody plar				
3			0.0%		Woody vine - All woo	ndy vina	e areata	than 2 20	ft in
4			0.0%		height.	July VIIIe	o greatel	u a l 1 3.20	11 111
-		= Tota	I Cove	r	•				
					Hydrophytic				
					Vegetation Present? Yes	; O N	lo 💿		

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18c upland

	iption: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)	
Depth (inches)	· 0.1(Matrix		Redox Features		
	Color (r		%	Color (moist) % Type 1 Loc ²	Texture Remarks	—
0-6	10YR	3/2	100%		Fine Sandy Loam	
6-10	2.5Y	5/1	100%		Fine Sandy Loam	
10-14	10YR	4/3	100%		Fine Sandy Loam	
						_
						—
						—
						—
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix	
Hydric Soil I					Indicators for Problematic Hydric Soils: 3	
Histosol (Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)	
☐ Black Hist				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)	
- Stratified Edyers (AS)				Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)	
Depicted below bank surface (ATT)				Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)	
Sandy Muck Mineral (S1) Depleted Dark Surface (F7)				Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)	
	eyed Matrix (S			Redox Depressions (F8)	☐ Piedmont Floodplain Soils (F19) (MLRA 149B) ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
Sandy Re					Red Parent Material (TF2)	
Stripped N	Matrix (S6)				☐ Very Shallow Dark Surface (TF12)	
☐ Dark Surf	ace (S7) (LRF	R R, MLRA	149B)		Other (Explain in Remarks)	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble		
Restrictive L						
Type: Bo	-	or rouy.				
Depth (inc					Hydric Soil Present? Yes ○ No •	
Remarks:						
Nomans.						



AN18c Wetland



AN18c Upland

Project/Site: Antrim Wind Project			City/Cou	ınty: Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Ene	rgy, LLC			Sta	te: NH	Sampling Point: AN18d wetland
Investigator(s): AF JG			Secti	on, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	 lillside		_	ief (concave, convex, n		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					-	-
Soil Map Unit Name:					NWI classifi —	cation:
Are climatic/hydrologic conditions on	the site typ	pical for this time of ye	ear?	Yes ● No ○	(If no, explain in	*
Are Vegetation , Soil ,	or Hydrolo	ogy 🗌 significantl	ly disturb	ed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation . , Soil . ,	or Hydrolo	ogy 🗌 naturally p	roblemat	ic? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Atta			amplir	ng point location	s, transects,	important features, etc.
J		No O				
1		No O		Is the Sampled Area within a Wetland?	Yes 💿 No 🔾	
Wetland Hydrology Present?	Yes	No O				
Hydrology						
						() ()
Wetland Hydrology Indicators: Primary Indicators (minimum of one	required: (chack all that anniv)				rs (minimum of 2 required)
Surface Water (A1)	required, (Water-Stained Leav	voc (PO)		✓ Surface Soil Cr✓ Drainage Patte	
High Water Table (A2)		Aquatic Fauna (B13			Moss Trim Line	
✓ Saturation (A3)		Marl Deposits (B15				ater Table (C2)
☐ Water Marks (B1)		Hydrogen Sulfide C			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosphe		Living Roots (C3)	Saturation Visi	ble on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduce	ed Iron (C	4)	Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tille	ed Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)	(0.7)	Thin Muck Surface	(C7)		Shallow Aquita	• •
Inundation Visible on Aerial Imagery (Sparsely Vegetated Concave Surface (Other (Explain in R	Remarks)		✓ Microtopograp✓ FAC-neutral Telephone	
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Pescribe Recorded Data (stream gauge	No • No • No c	Depth (inches): Depth (inches): Depth (inches): pring well, aerial photo	0 os, previo		ology Present? able:	Yes No
Remarks:						

VEGETATION - Use scientific names of p		_Sp	ominant pecies?		Sampling Point: AN18d wetland				
Tree Stratum (Plot size:)	Absolute % Cover			Indicator Status	Dominance Test worksheet:				
1.	0	П	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)				
2.		\Box	0.0%		That are OBE, FAOW, OF FAO.				
3		\Box	0.0%		Total Number of Dominant Species Across All Strata: 3 (B)				
4.		\Box	0.0%		Species Across All Strata: 3 (B)				
5		\Box	0.0%		Percent of dominant Species				
6	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)				
7			0.0%		Prevalence Index worksheet:				
		= To	otal Cove	- — — ·	Total % Cover of: Multiply by:				
Sapling/Shrub Stratum (Plot size: 15')		_			OBL species 0 x 1 = 0				
1. Fraxinus pennsylvanica	15	\checkmark	60.0%	FACW	FACW species 113 x 2 = 226				
2. Betula alleghaniensis	10	✓	40.0%	FAC	FAC species 10 x 3 = 30				
3	0		0.0%		FACU speci es				
4	0		0.0%		UPL species $0 \times 5 = 0$				
5	0		0.0%		(D)				
6			0.0%		Col umn Total s: 123 (A) 256 (B)				
7	0	Ш	0.0%		Prevalence Index = B/A = 2.081				
Herb Stratum (Plot size: 5')	25	= To	otal Cove	r	Hydrophytic Vegetation Indicators:				
1.Onoclea sensibilis	80 ✓ 81.6% FACW				Rapid Test for Hydrophytic Vegetation				
2 Eunatoriadolphus dubius			5.1%	FACW	✓ Dominance Test is > 50%				
3. Fraxinus pennsylvanica			3.1%	FACW	✓ Prevalence Index is ≤3.0 ¹				
4.Osmunda cinnamomea			10.2%	FACW	Morphological Adaptations ¹ (Provide supporting				
5.	0	\Box	0.0%	.,,,,,,,,	data in Remarks or on a separate sheet)				
6.		\Box	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)				
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must				
8.	0		0.0%		be present, unless disturbed or problematic.				
9.	0		0.0%		Definitions of Vegetation Strata:				
10.	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11.	0		0.0%		at breast height (DBH), regardless of height.				
12.	0		0.0%						
	98	= To	otal Covei	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall				
Woody Vine Stratum (Plot size:)									
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of				
2			0.0%		size, and woody plants less than 3.28 ft tall.				
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in				
4	0		0.0%		height.				

0 ___ = Total Cover

Hydrophytic Vegetation Present?

 $\label{lem:Remarks: (Include photo numbers here or on a separate sheet.)} \\$

Yes ● No ○

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18d wetland

Depth (inches)		Matrix			D-	dox Featu	ros		absence of indicators.)	
	Color (n		_ % -	Color (n		**************************************		Loc2	Texture	Remarks
0-7	10YR	3/2	100%						Fine Sandy Loam	
7-11	2.5Y	4/2	90%	10YR	5/8	10%		M	Fine Sandy Loam	
			- 7070						rine canaj zeam	
									-	
									-	
		=Depletio	n. RM=Red	uced Matrix, C	S=Cover	ed or Coate	d Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=N	Matrix
Hydric Soil I									Indicators for Probl	ematic Hydric Soils: 3
Histosol (☐ Polyv	alue Belo . 149B)	w Surface (S8) (LRR F	2,		(LRR K, L, MLRA 149B)
	pedon (A2)					ace (S9) (L	RR R. MI R	PA 149B)	Coast Prairie Redo	ox (A16) (LRR K, L, R)
☐ Black Hist						Mineral (F1)			5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)
_	Sulfide (A4) Layers (A5)					Matrix (F2)			Dark Surface (S7)	
	Below Dark S	urface (A	11)		ted Matri					Surface (S8) (LRR K, L)
	k Surface (A1		11)	Redo	x Dark Su	ırface (F6)			Thin Dark Surface	
_	ıck Mineral (S			☐ Deple	ted Dark	Surface (F7	')		_	Masses (F12) (LRR K, L, R)
	eyed Matrix (S			Redo	k Depress	sions (F8)				ain Soils (F19) (MLRA 149B)
Sandy Re		,							Red Parent Mater	5) (MLRA 144A, 145, 149B)
Stripped I	Matrix (S6)								Very Shallow Dark	
☐ Dark Surf	ace (S7) (LRR	R, MLRA	149B)						Other (Explain in	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	nd hvdrologv	must be i	present, unl	ess disturb	ed or probl		······································
Restrictive L				<u> </u>						
Type:	ayer (II obse	erveu).								
Depth (inc	has).								Hydric Soil Present?	Yes No
-	1163)									
Remarks:										
Remarks:										
Remarks:										
Remarks:										
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Project/Site: Antrim Wind Project			City/County:	Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable E	inergy, LLC			Sta	te: NH	Sampling Point: an18d upland
Investigator(s): AF JG			Section.	Γownship, Range:	S. T.	<u>.</u>
Landform (hillslope, terrace, etc.):	Hillside		_	concave, convex, r		Slope: 8.0 % / 4.6 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
					NWI classif	
Soil Map Unit Name:					— NVVI CIASSII	ication:
Are climatic/hydrologic conditions of	on the site ty	pical for this time of ye	ear? Y	es No	(If no, explain in	•
Are Vegetation , Soil	, or Hydrold	ogy Significant	ly disturbed?	Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At			ampling p	point location	s, transects	important features, etc.
Hydrophytic Vegetation Present?	Yes 🔾	No •				
Hydric Soil Present?	Yes 🔾	No •		e Sampled Area in a Wetland?	Yes 🔾 No 🖲)
Wetland Hydrology Present?	Yes 🔾	No 💿				
Hydrology						
Wetland Hydrology Indicators:	ac required.	abook all that apply)				ors (minimum of 2 required)
Primary Indicators (minimum of or Surface Water (A1)	ie requireu;		(DO)		Surface Soil C	
High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1)	, ,		☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				dater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizospho		g Roots (C3)		ible on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduc	-		Stunted or Str	ressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled Sc	oils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Image		Other (Explain in R	Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface	:e (B8)				FAC-neutral T	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):		_		
Water Table Present? Yes	No ●	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No ●	Depth (inches):		Wetland Hydi	rology Present?	Yes Uno S
Describe Recorded Data (stream g	auge, monito	oring well, aerial photo	os, previous ir	nspections), if avai	lable:	
Remarks:						

VEGETATION - Use scientific names of plan	ıts		ominant		Sampling Point: an18d upland
	Absolute		ecies?	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover		over	Status	Number of Dominant Species
1. Tsuga canadensis	33	✓	43.4%	FACU	That are OBL, FACW, or FAC: 2 (A)
2. Populus tremula	10	Ц	13.2%	FACU	Total Number of Dominant
3. Fraxinus pennsylvanica	33	✓	43.4%	FACW	Species Across All Strata: 6 (B)
4	0	Ц	0.0%		
5	0		0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)
6	0	Ш	0.0%		That are OBL, FACW, OF FAC.
7	0		0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')	76	= To	otal Cove	r	Total % Cover of: Multiply by:
1. Acer rubrum	25	V	22.20/	FAC	0BL speci es 0 x 1 = 0
	<u>25</u>	▼	33.3%	FAC	FACW species 33 x 2 = 66
2. Fagus grandifolia	15	▼	20.0%	FACU	FAC species30 x 3 =90
3. Pinus strobus	25		33.3%	FACU	FACU speci es 106 x 4 = 424
4. Betula papyrifera			13.3%	FACU	UPL species $\frac{25}{}$ x 5 = $\frac{125}{}$
5			0.0%		Column Total s: 194 (A) 705 (B)
6			0.0%		
7	0	Ш	0.0%		Prevalence Index = B/A = 3.634
Herb Stratum (Plot size: 5')	75	= To	otal Cove	r	Hydrophytic Vegetation Indicators:
1.Solidago canadensis	0		10 40/	FACIL	Rapid Test for Hydrophytic Vegetation
2.Rubus alumnus			18.6%	FACU-	☐ Dominance Test is > 50%
		✓	11.6%		☐ Prevalence Index is ≤3.0 ¹
3. Dennstaedtia punctilobula			58.1%	UPL	☐ Morphological Adaptations ¹ (Provide supporting
4.Trientalis borealis 5.	5		11.6%	FAC	data in Remarks or on a separate sheet)
6.			0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)
7.			0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.			0.0%		be present, unless disturbed or problematic.
8. 9.			0.0%		Definitions of Vegetation Strata:
	0		0.0%		beamtions of vegetation strata.
10			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0		0.0%		at breast height (DBH), regardless of height.
12	0		0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	43	= To	otal Cove	r	greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0_		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.
					1

0 = Total Cover

Hydrophytic Vegetation

Present?

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

Yes ○ No ●

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an18d upland

	iption: (Des	scribe to	the depth	needed to document the indicator or confirm the a	bsence of indicators.)	
Depth (inches)	* 0.1(Matrix		Redox Features Color (moist) % Type 1 Loc²		
	Color (r		1000/	Color (moist) % Type 1 Loc2	Texture Remarks	
0-6	10YR	3/2	100%		Loam	
6-10	2.5Y	5/1	100%		Fine Loamy Sand	
10-16	10YR	4/3	100%		Fine Sandy Loam	
• •		=Depletion	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix	
Hydric Soil I					Indicators for Problematic Hydric Soils	: 3
Histosol (•			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 1498	3)
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)	
Black Hist	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, I	_, R)
	Layers (A5)			☐ Loamy Gleyed Matrix (F2)	☐ Dark Surface (S7) (LRR K, L)	
	Below Dark S	Surface (A	11)	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	k Surface (A1		·	Redox Dark Surface (F6)	☐ Thin Dark Surface (S9) (LRR K, L) ☐ Iron-Manganese Masses (F12) (LRR K,	ı D)
☐ Sandy Mu	ıck Mineral (S	51)		Depleted Dark Surface (F7)	Piedmont Floodplain Soils (F19) (MLRA	
Sandy Gle	eyed Matrix (S	S4)		Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145,	
Sandy Re					Red Parent Material (TF2)	,
	Matrix (S6)				Very Shallow Dark Surface (TF12)	
Dark Surf	ace (S7) (LRF	R R, MLRA	149B)		Other (Explain in Remarks)	
³ Indicators of	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble	ematic.	
Restrictive L	ayer (if obs	erved):				
Type: Bo	oulders					
Depth (inc	hes): 16				Hydric Soil Present? Yes No	•)
Remarks:						
Spodosol						



AN18d Upland



AN18d Wetland

Project/Site: Antrim Wind Project			City/Cou	nty: Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	te: NH	Sampling Point: AN18e Wetland
Investigator(s): AF JG			Section	on, Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.):	Hillside		_	ef (concave, convex, r		Slope: 10.0 % / 5.7 °
Subregion (LRR or MLRA):		Lat.:				Datum:
		Lat		Long		
Soil Map Unit Name:					NWI classif	ication: PFO
Are climatic/hydrologic conditions of	n the site typ	pical for this time of ye	ear?	Yes ● No ○	(If no, explain in	· · · · · · · · · · · · · · · · · · ·
Are Vegetation . , Soil .	, or Hydrold	ogy 🗌 significantl	ly disturbe	ed? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrolo	ogy 🗌 naturally p	roblemati	c? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At	tach site	map showing s	amplin	g point location	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?		No O				
Hydric Soil Present?	Yes 💿	No O		s the Sampled Area within a Wetland?	Yes ● No ○)
Wetland Hydrology Present?	Yes 💿	No O				
Hydrology						
Wetland Hydrology Indicators: Primary Indicators (minimum of or	o roquirod:	chock all that apply)				ors (minimum of 2 required)
Surface Water (A1)	ie requireu, t		(DO)		✓ Surface Soil Co✓ Drainage Patte	
High Water Table (A2)		✓ Water-Stained Lear Aquatic Fauna (B13)			Moss Trim Lin	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
☐ Water Marks (B1)		Hydrogen Sulfide C			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosphe		Living Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	ed Iron (C4	1)	Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tille	d Soils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface	(C7)		Shallow Aquita	, ,
Inundation Visible on Aerial Imager		Other (Explain in R	Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface	e (B8)				✓ FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes	No ●	Depth (inches):		Watland Hudi	rology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches):	0	wetiand Hydi	rology Present?	Tes S NO S
Describe Recorded Data (stream ga	auge, monito	oring well, aerial photo	os, previou	us inspections), if avai	lable:	
Remarks:						

/EGETATION - Use scientific names of p		DominantSpecies? _			Sampling Point: AN18e Wetland					
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status						
Fraxinus pennsylvanica	15	V	30.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: 6 (A					
Acer rubrum	20	\mathbf{V}	40.0%	FAC						
Betula alleghaniensis	10	V	30.0%	FAC	Total Number of Dominant Species Across All Strata: 6 (B					
			0.0%		Species Across Air Strata.					
			0.0%		Percent of dominant Species					
			0.0%		That Are OBL, FACW, or FAC: 100.0% (A					
			0.0%		Prevalence Index worksheet:					
		= To	tal Cove	- ——— r	Total % Cover of: Multiply by:					
apling/Shrub Stratum (Plot size: 15')					OBL species 0 x 1 = 0					
_ Betula alleghaniensis		∠	100.0%	FAC	FACW species 136 x 2 = 272					
			0.0%		FAC species 85 x 3 = 255					
	0	\sqcup	0.0%		FACU species 0 x 4 = 0					
•	0	\square	0.0%		TACO Species x 4					
•	0	\sqcup	0.0%		UPL species x 5 =					
•	0		0.0%		Column Totals: <u>221</u> (A) <u>527</u>					
•	0		0.0%		Prevalence Index = B/A = 2.385					
lerb Stratum (Plot size: 5')		= To	tal Cove	r	Hydrophytic Vegetation Indicators:					
					Rapid Test for Hydrophytic Vegetation					
1.Osmunda cinnamomea		V	27.3%	FACW	✓ Dominance Test is > 50%					
2.Onoclea sensibilis		✓.	27.3%	FACW	✓ Prevalence Index is ≤3.0 ¹					
3.Eupatoriadelphus dubius		\square	16.5%	FACW	 ☐ Morphological Adaptations ¹ (Provide supporting 					
4.Impatiens capensis		\square	16.5%	FACW	data in Remarks or on a separate sheet)					
5.Coptis trifolia	15	\square	12.4%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)					
<u>6.</u>		\square	0.0%		1					
7		\square	0.0%		¹ Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.					
8		\sqsubseteq	0.0%		Definitions of Vegetation Strata:					
9		\sqsubseteq	0.0%		Definitions of Vegetation Strata.					
0		Ц.	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diame					
1		\sqsubseteq	0.0%		at breast height (DBH), regardless of height.					
2		\square	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH a					
Noody Vine Stratum (Plot size:)	121	= To	tal Cove	r	greater than 3.28 ft (1m) tall					
-	0		0.00/							
	0		0.0%		Herb - All herbaceous (non-woody) plants, regardles size, and woody plants less than 3.28 ft tall.					
2		Η.	0.0%		oles, and weeky plante less than oles it tam					
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in					
1		Ш.	0.0%		height.					
		= To	tal Cove	r						
					Hydrophytic					
					Hydrophytic Vegetation					
					Present? Yes No					

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18e Wetland

	iption: (Des		the depth	needed to d				onfirm the	absence of indicators.)	
Depth (inches)	Color (ı	Matrix moist)	_ %	_ Color (ı		dox Featu %	ires Type 1	_ Loc²	Texture	Remarks
0-8	10YR	2/1	100%	20101 (1			- JPC		Muck	
8-11	2.5Y	4/1	75%	10YR	4/6	25%			mucky sand	1
11-13	10YR	3/2	- 7070		.,,				Sandy Loam	1
11-13	1011	3/2							Sandy Loan	
¹ Type: C=Cond	centration. D	=Depletio	n. RM=Red	uced Matrix, (CS=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=N	Matrix
Hydric Soil I									Indicators for Probl	ematic Hydric Soils : 3
Histosol (A	•			☐ Poly\ MLR	ralue Belov A 149B)	w Surface ((S8) (LRR F	₹,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)
	bedon (A2)				•	ace (S9) (I	LRR R, MLF	RA 149B)	Coast Prairie Redo	ox (A16) (LRR K, L, R)
Black Histi	Sulfide (A4)) LRR K, L)			or Peat (S3) (LRR K, L, R)
_	Layers (A5)			Loam	ny Gleyed	Matrix (F2))		Dark Surface (S7)	
_	Below Dark S	Surface (A	11)	Deple	eted Matri	x (F3)			_ `	Surface (S8) (LRR K, L)
	k Surface (A1				x Dark Su	, ,			☐ Thin Dark Surface	Masses (F12) (LRR K, L, R)
Sandy Mu	ck Mineral (S	51)				Surface (F	7)		_	ain Soils (F19) (MLRA 149B)
	eyed Matrix (S4)		∟ Redo	x Depress	ions (F8)				6) (MLRA 144A, 145, 149B)
Sandy Red									Red Parent Mater	
	Matrix (S6)		4.400)						Very Shallow Dark	Surface (TF12)
	ace (S7) (LRI								Other (Explain in	Remarks)
³ Indicators of	hydrophytic	vegetatio	n and wetla	nd hydrology	must be p	resent, un	less disturb	ed or probl	ematic.	
Restrictive La	ayer (if obs	erved):								
Type:									Hydric Soil Present?	Yes ● No ○
Depth (inch	nes):								Tryunc 3011 Fresent:	Tes S NO S
Remarks:										

Project/Site: Antrim Wind Project	(City/County: Antrim		Sampling Date: 17-Aug-11	
Applicant/Owner: Eolian Renewable Energy,	LLC	Sta	te: NH	Sampling Point: AN18e upland	
Investigator(s): AF JG		Section, Township, Range:	S. T.	 R.	
Landform (hillslope, terrace, etc.): Hillsic	 de	ocal relief (concave, convex, r		Slope: 15.0 % / 8.5 °	
Subregion (LRR or MLRA):	Lat.:	Long		Datum:	
					
Soil Map Unit Name:			NWI classif	ication:	
Are climatic/hydrologic conditions on the	site typical for this time of yea	ar? Yes No	(If no, explain in	•	
Are Vegetation U , Soil U , or F	lydrology 🗌 significantly	disturbed? Are "Normal	Circumstances" p	oresent? Yes No	
Are Vegetation, Soil, or F	lydrology 🗌 naturally pro	oblematic? (If needed,	explain any answe	ers in Remarks.)	
Summary of Findings - Attach	<u> </u>	impling point location	s, transects,	important features, etc.	
Hydrophytic Vegetation Present? Yes					
Hydric Soil Present? Yes		Is the Sampled Area within a Wetland?	Yes O No 🗨		
Wetland Hydrology Present? Yes	O No 💿				
Hydrology					
Wetland Hydrology Indicators:				ors (minimum of 2 required)	
Primary Indicators (minimum of one requ			Surface Soil C		
Surface Water (A1) High Water Table (A2)	Water-Stained Leave☐ Aquatic Fauna (B13)	• •	☐ Drainage Patte		
Saturation (A3)	Marl Deposits (B15)			ater Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Od		Crayfish Burro		
Sediment Deposits (B2)		res along Living Roots (C3)		ible on Aerial Imagery (C9)	
Drift deposits (B3)	Presence of Reduce			ressed Plants (D1)	
Algal Mat or Crust (B4)		on in Tilled Soils (C6)	Geomorphic P		
☐ Iron Deposits (B5)	Thin Muck Surface (• •	Shallow Aquita		
☐ Inundation Visible on Aerial Imagery (B7)	Other (Explain in Re	marks)	Microtopograp	ohic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)		,	FAC-neutral T	est (D5)	
Field Observations: Surface Water Present? Yes No	Depth (inches):				
	Depth (inches):	Wetland Hyde	ology Present? Yes No •		
Saturation Present? (includes capillary fringe) Yes O	Depth (inches): _				
Describe Recorded Data (stream gauge,	monitoring well, aerial photos	, previous inspections), if avai	lable:		
Remarks:					

VEGETATION - Use scientific names of p			ominant ecies?		Sampling Point: AN18e upland					
Tree Stratum (Plot size: 30')	Absolute % Cover			Indicator Status						
_ Fagus grandifolia	33	V	43.4%	FACU	Number of Dominan That are OBL, FACW			2	(A)	
Tsuga canadensis	22	~	43.4%	FACU	·		-		. ,	
Betula papyrifera			13.2%	FACU	Total Number of Dor Species Across All St			7	(B)	
			0.0%		Species Across Air St	rata.	-		(D)	
j	0		0.0%		Percent of domina			20.40/	(A (D)	
3.	0		0.0%		That Are OBL, FAG	CW, or FA	C:	28.6%	(A/B)	
·	0		0.0%		Prevalence Index v	worksheet	:			
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cove	r	Total % Cov	er of:	Multiply	y by:	_	
. Fagus grandifolia	40	V	53.3%	FACU	OBL species	0	x 1 =	0		
) Acor populyopique	20	✓	26.7%	FACU	FACW species	0	x 2 =	0	_	
Potulo elloghopionois	15		20.0%	FAC	FAC species	30	x 3 =	90		
			0.0%	170	FACU species	141	x 4 =	564	-	
l 5			0.0%		UPL species	0	x 5 =	0	-	
S			0.0%		Column Totals:	171	(A)	654	(B)	
			0.0%		Prevalence In	 dex = B/A	. =	3.825	-	
		= Total Cov			Tretaience maex 2//					
derb Stratum (Plot size: 5')					Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation					
1. Thelypteris noveboracensis	75.0%	FAC	Dominance Test is > 50%							
2. Quercus rubra	5	✓	25.0%	FACU-	CU- Dominance Test is > 50% □ Prevalence Index is ≤ 3.0 ¹					
3	0		0.0%		☐ Morphologica			ovido supr	ortina	
4 <u>.</u>	0		0.0%		data in Rema	rks or on a	separate	e sheet)	orting	
5			0.0%		☐ Problematic I	Hydrophyt	ic Vegeta	tion ¹ (Exp	olain)	
6			0.0%		1					
7			0.0%		Indicators of hy be present, unless	dric soil ai disturbed	nd wetlan Lor probl	nd hydroloલ્ ematic.	gy mus	
8			0.0%							
9			0.0%		Definitions of V	egetatio	Juata	•		
0			0.0%		Tree - Woody plan				liamete	
1			0.0%		at breast height (D	BH), rega	rdless of	height.		
2	0	Ш	0.0%		Sapling/shrub - Wo	oody plant	s less tha	an 3 in. DE	BH and	
Woody Vine Stratum (Plot size:)		= To	otal Cove	r	greater than 3.28 f	t (1m) tall				
1	0		0.0%		Herb - All herbace				rdless	
2			0.0%		size, and woody pl	ants less	than 3.28	3 ft tall.		
3			0.0%		Woody vine - All w	oodv vine	s greater	than 3.28	ft in	
4			0.0%		height.	55a, 15	o g. cato.			
	0	= Tc	otal Cove	r						
					Hydrophytic Vegetation Present? Y	es O	lo ⊙			

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18e upland

Profile Descr	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)				
Depth (inches)		Matrix		Redox Features Color (moist) % Type 1 Loc²					
	Color (ı		%	Color (moist) % Type 1 Loc2	Texture Remarks				
0-5	10YR	3/2	100%		Loam				
5-7	2.5Y	4/8	100%		Fine Sand				
7-16	10YR	4/3	100%		Fine Sandy Loam				
4		-							
, ·		=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca					
Hydric Soil I					Indicators for Problematic Hydric Soils : 3				
Histosol ((A1) pedon (A2)			Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)				
Black Hist				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)				
	n Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)				
	Layers (A5)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)				
	Below Dark S	Surface (A	11)	Depleted Matrix (F3)	☐ Polyvalue Below Surface (S8) (LRR K, L) ☐ Thin Dark Surface (S9) (LRR K, L)				
	k Surface (A1			Redox Dark Surface (F6)	Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy Mu	uck Mineral (S	51)		Depleted Dark Surface (F7)	Piedmont Floodplain Soils (F19) (MLRA 149B)				
	eyed Matrix (S4)		Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy Re					Red Parent Material (TF2)				
	Matrix (S6)				Very Shallow Dark Surface (TF12)				
☐ Dark Surf	face (S7) (LRI	R R, MLRA	149B)		Other (Explain in Remarks)				
³ Indicators o	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or proble	ematic.				
Restrictive L	ayer (if obs	erved):							
Type: Bo	oulders								
Depth (inc	thes): 16				Hydric Soil Present? Yes ○ No ●				
Remarks:									
Spodosol									



AN18e Wetland



AN18e Upland

Project/Site: Antrim Wind Project			City/Cou	nty: Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable End	ergy, LLC			Sta	ate: NH	Sampling Point: AN18f wetland
Investigator(s): AF JG			Section	on, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Swale		_	ef (concave, convex,		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):		Lat.:		Lon	·	Datum:
		Lat				
Soil Map Unit Name:					NWI classif	ication: PFO
Are climatic/hydrologic conditions on	the site typ	pical for this time of y	ear?	Yes ● No ○	(If no, explain in	*
Are Vegetation, Soil	, or Hydrolo	ogy 🗌 significant	ly disturbe	ed? Are "Norma	l Circumstances" p	oresent? Yes No
Are Vegetation . , Soil .	, or Hydrolo	ogy 🗌 naturally p	roblemati	c? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Att			amplin	g point location	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?		No O		- M Cl-d A		
Hydric Soil Present?		No O		s the Sampled Area vithin a Wetland?	Yes 💿 No 🗆)
Wetland Hydrology Present?	Yes	No O				
I hadrolo ma						
Hydrology						
Wetland Hydrology Indicators:		-1111-4141				ors (minimum of 2 required)
Primary Indicators (minimum of one	requirea; o				Surface Soil C	
Surface Water (A1)		✓ Water-Stained Lea			✓ Drainage Patte	
☐ High Water Table (A2) ✓ Saturation (A3)		Aquatic Fauna (B1			Moss Trim Lin	
Water Marks (B1)		Marl Deposits (B15			Crayfish Burro	ater Table (C2)
Sediment Deposits (B2)		Hydrogen SulfideOxidized Rhizosph		iving Poots (C2)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	•			essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc			Geomorphic P	` '
☐ Iron Deposits (B5)		Thin Muck Surface		u 30113 (00)	Shallow Aquita	` '
Inundation Visible on Aerial Imagery	(B7)	Other (Explain in F	` ,		_	ohic Relief (D4)
Sparsely Vegetated Concave Surface		Other (Explain in I	verriai ks)		FAC-neutral T	
Field Observations:						
Surface Water Present? Yes O	No O	Depth (inches):	4			
Water Table Present? Yes	No 💿	Depth (inches):				Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches):	0	Wetland Hyd	Irology Present?	Yes ♥ NO ∪
Describe Recorded Data (stream gau	ige, monito	ring well, aerial photo	os, previou	ıs inspections), if ava	ilable:	

VEGETATION - Use scientific names of pl		_Sp	ominant ecies?		Sampling Point: AN18f wetland
Tree Stratum (Plot size: 30')	Absolute % Cover			Indicator Status	Dominance Test worksheet:
Betula alleghaniensis	33		100.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
. Detail dilegrations			0.0%	TAO	That are OBL, I ACW, OF IAC.
··		\Box	0.0%		Total Number of Dominant
) 		\Box	0.0%		Species Across All Strata: 5 (B)
		\exists	0.0%		Percent of dominant Species
		\Box	0.0%		That Are OBL, FACW, or FAC: 100.0% (A/E
		\Box	0.0%		Prevalence Index worksheet:
•		т.			Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')		= 10	tal Cove	Γ	0BL species 0 x 1 = 0
. Betula alleghaniensis	25	V	55.6%	FAC	
Acer rubrum	10	V	22.2%	FAC	FACW species $43 \times 2 = 86$
Fraxinus pennsylvanica	10	\checkmark	22.2%	FACW	FAC species $\phantom{00000000000000000000000000000000000$
			0.0%		FACU species $0 \times 4 = 0$
5.	0		0.0%		UPL species x 5 =0
5.			0.0%		Column Totals: 111 (A) 290 (B
	0		0.0%		Prevalence Index = B/A = 2.613
		= To	tal Cove	r	Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5'					Rapid Test for Hydrophytic Vegetation
Onoclea sensibilis	33	\mathbf{V}	100.0%	FACW	✓ Dominance Test is > 50%
2	0		0.0%		✓ Prevalence Index is ≤3.0 ¹
3	0		0.0%		■ Morphological Adaptations ¹ (Provide supporting
4	0		0.0%		data in Remarks or on a separate sheet)
5	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
6	0		0.0%		
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology mu
8	0		0.0%		be present, unless disturbed or problematic.
9	0		0.0%		Definitions of Vegetation Strata:
0	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diamet
1.	0		0.0%		at breast height (DBH), regardless of height.
2.	0		0.0%		One the state of t
Woody Vine Stratum (Plot size:)	33	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in
4	0		0.0%		height.
	0	= To	tal Cove	r	
					Hydrophytic Vegetation Present? Yes No

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

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18f wetland

	otion: (Des	cribe to	the depth	needed to	documen	t the indic	ator or co	nfirm the	absence of indicators.)	
Depth (inches)	Color (n	Matrix	_ %	Color (edox Featu %		Loc2	Texture	Remarks
	•			Color	inoist)		Type	LOC-		Remarks
0-8	10YR	3/2	100%						Sandy Loam	
8-16	2.5Y	5/2	80%	10YR	4/6	20%	C	М	Gravelly Sand	
										-
_										
										-
						_				
1 Type: C. Cope	ontration D	Doplotio	n DM Doo	Lucad Matrix	CS Cover	od or Coata	d Sand Cra	inc 2loc	estion: DL Doro Lining M A	
		=Depletio	n. Rivi=Rec	luceu iviatrix,	C3=C0Vei	ed of Coate	eu Sanu Gra	airis ²Loc	ation: PL=Pore Lining. M=N	
Hydric Soil In						6 6	(CO) (LDD D		Indicators for Probl	ematic Hydric Soils: 3
Histosol (A					value Belo RA 149B)	w Surface (58) (LRR R		2 cm Muck (A10)	(LRR K, L, MLRA 149B)
Histic Epipe Black Histic						ace (S9) (L	RR R, MLR	A 149B)	Coast Prairie Red	ox (A16) (LRR K, L, R)
	Sulfide (A4)			Loai	my Mucky	Mineral (F1) LRR K, L)			or Peat (S3) (LRR K, L, R)
Stratified La						Matrix (F2)			Dark Surface (S7)	
	elow Dark S	urface (A	11)	☐ Dep	leted Matr	ix (F3)				Surface (S8) (LRR K, L)
	Surface (A1		,	Red	ox Dark Su	urface (F6)			Thin Dark Surface	
	k Mineral (S	•		☐ Dep	leted Dark	Surface (F	7)			Masses (F12) (LRR K, L, R)
	ed Matrix (S			Red	ox Depres	sions (F8)				ain Soils (F19) (MLRA 149B)
Sandy Red		,							Red Parent Mater	5) (MLRA 144A, 145, 149B)
Stripped Ma									Very Shallow Darl	
☐ Dark Surfac	ce (S7) (LRR	R, MLRA	149B)						Other (Explain in	
³ Indicators of I	hydrophytic	vegetatio	n and wett	and hydrology	ı must ha	nrasant un	lace dicturh	ed or prob		Kemarkay
			ii ana weti	ina riyarolog	y must be	present, un	icss distain	ca or prob	icinatic.	
Restrictive La	yer (if obse	erved):								
Type:									Hydric Soil Present?	Yes ● No ○
Depth (inche	es):								,	163 0 110 0
Remarks:										
Alluvial Soils										

Project/Site: Antrim Wind Project			City/County:	Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	te: NH	Sampling Point: AN18f Upland
Investigator(s): AF JG			Section, To	wnship, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Toeslope		_	oncave, convex, r		Slope: 10.0 % / 5.7 °
Subregion (LRR or MLRA):	· · · · · · · · · · · · · · · · · · ·	Lat.:		Long	1.:	Datum:
						-
Soil Map Unit Name:					NWI classif	ication:
Are climatic/hydrologic conditions of	on the site ty	pical for this time of y	ear? Ye	s • No O	(If no, explain in	*
Are Vegetation, Soil	, or Hydrold	ogy 🗌 significant	ly disturbed?	Are "Normal	Circumstances" p	present? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At		<u> </u>	ampling p	oint location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?		No •		0 1 10		
Hydric Soil Present?	Yes 🔾	No •		Sampled Area n a Wetland?	Yes \bigcirc No $ullet$)
Wetland Hydrology Present?	Yes 🔾	No 💿				
Hydrology						
Wetland Hydrology Indicators:		ala ada all Ala Ala anni h A				ors (minimum of 2 required)
Primary Indicators (minimum of or	ne requirea;		(5-5)		Surface Soil C	
Surface Water (A1) High Water Table (A2)		Water-Stained Lea Aquatic Fauna (B1			☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		Roots (C3)		ible on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduc		,		ressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled Soil	s (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface	(C7)		Shallow Aquita	
Inundation Visible on Aerial Image		Other (Explain in F	Remarks)			ohic Relief (D4)
Sparsely Vegetated Concave Surface	:e (B8)				FAC-neutral T	est (D5)
Field Observations:						
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes	No ●	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No ●	Depth (inches):		Wetland Hydi	rology Present?	Yes ∪ NO ♥
Describe Recorded Data (stream g	auge, monito	oring well, aerial photo	os, previous ins	pections), if avai	lable:	
Remarks:						
1						

/EGETATION - Use scientific names of p			minant ecies?		Sampling Point: AN18f Upland			
ree Stratum (Plot size: 30')	Absolute % Cover	Re	I.Strat.	Indicator Status	Dominance Test worksheet:			
		✓	50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)			
Acer rubrum Fraxinus pennsylvanica	40	▼ .	50.0%	FACW	That are OBL, FACW, or FAC: 3 (A)			
		<u> </u>		FACW	Total Number of Dominant			
·	0	Η.	0.0%		Species Across All Strata: 6 (B)			
-		Н.	0.0%		Percent of dominant Species			
		Η.	0.0%		That Are OBL, FACW, or FAC: 50.0% (A/E			
•		Η.	0.0%					
-		Ш.	0.0%		Prevalence Index worksheet:			
apling/Shrub Stratum (Plot size: 15')	80	= To	tal Cove	r	Total % Cover of: Multiply by:			
Ostrya virginiana	25	V	31.3%	FACU-	0BL speci es 0 x 1 = 0			
Pinus strobus	10	\Box	12.5%	FACU	FACW species $40 \times 2 = 80$			
Betula alleghaniensis			12.5%	FAC	FAC species $70 \times 3 = 210$			
Fagus grandifolia	15		18.8%	FACU	FACU speci es x 4 = 280			
. Acer pensylvanicum	20	<u>✓</u>	25.0%	FACU	UPL species $\frac{5}{}$ x 5 = $\frac{25}{}$			
			0.0%		Column Totals: 185 (A) 595 (B			
		\Box	0.0%		Prevalence Index = B/A = 3.216			
		– То	tal Cove					
lerb Stratum (Plot size: 5')		_ 10	ital Cove	1	Hydrophytic Vegetation Indicators:			
1.Maianthemum canadense	20	✓	80.0%	FAC-	Rapid Test for Hydrophytic Vegetation			
2.Polygonatum pubescens		V	20.0%	UPL	Dominance Test is > 50%			
3.			0.0%		☐ Prevalence Index is ≤3.0 ¹			
4.			0.0%		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
5.			0.0%		data in Remarks or on a separate sneet) Problematic Hydrophytic Vegetation ¹ (Explain)			
6.	0		0.0%		Problematic Hydrophytic Vegetation (Explain)			
7.	0		0.0%		¹ Indicators of hydric soil and wetland hydrology mu			
8.	0	\Box	0.0%		be present, unless disturbed or problematic.			
9.		\Box	0.0%		Definitions of Vegetation Strata:			
0.	0	\Box	0.0%		Tree Mesharists Ois (7.0 cm) or results from the			
1.		$\overline{\Box}$	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diamet at breast height (DBH), regardless of height.			
2.		\Box	0.0%		at broadt noight (2217), rogaratoss of noight			
- -		 _ To	tal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and			
Noody Vine Stratum (Plot size:)		_ 10	ital Cove	•	greater than 3.28 ft (1m) tall			
	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless			
2.			0.0%		size, and woody plants less than 3.28 ft tall.			
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in			
4			0.0%		height.			
		- To	tal Cove					
					Hydrophytic Vegetation Present? Yes No No			

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN18f Upland

	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the a	absence of indicators.)
Depth (inches)	. Color (ı	Matrix	_ %	Redox Features Color (moist) % Type 1 Loc²	Texture Remarks
0-8	10YR	3/2	100%	Color (moist) % Type 1 Loc2	Fine Sandy Loam
8-14	10YR	3/4	100%		Fine Sandy Loam
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	tion: PL=Pore Lining. M=Matrix
Hydric Soil I	Indicators:				Indicators for Problematic Hydric Soils: 3
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epi	pedon (A2)			MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hist				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)Loamy Gleyed Matrix (F2)	☐ Dark Surface (S7) (LRR K, L)
	Layers (A5)			Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	Below Dark S k Surface (A		11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
	uck Mineral (S			Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
	eyed Matrix (Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Re		54)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Matrix (S6)				Red Parent Material (TF2)
	face (S7) (LRI	R R, MLRA	149B)		✓ Very Shallow Dark Surface (TF12)✓ Other (Explain in Remarks)
3 Indicators of	f hydronhytic	voqotatio	a and wotla	nd hydrology must be present, unless disturbed or proble	
			Tana wetta	ind flydrology flust be present, unless disturbed of proble	matic.
Restrictive L	-	erved):			
Type: Bo					Hydric Soil Present? Yes ○ No ●
Depth (inc	nes):_14				7 100 1 110 1
Remarks:					



AN18f Wetland



AN18f Upland



AN18f Wetland

roject	City/Co	ounty: Antrim		Sampling Date: 16-Aug-11
newable Energy, LLC		Sta	te: NH	Sampling Point: an20 wetland
	Sec	tion, Township, Range:	S. T.	
e, etc.): Toeslope				Slope: 3.0 % / 1.7 °
	Lat·	Long		Datum:
				-
			INVVI CIASSITI	cation: PEM
iditions on the site ty	pical for this time of year?	Yes ● No ○	(If no, explain in	
oil 🗌 , or Hydrol	ogy 🗌 significantly distu	rbed? Are "Normal	Circumstances" p	resent? Yes No
oil 🗌 , or Hydrol	ogy naturally problem	atic? (If needed,	explain any answe	ers in Remarks.)
gs - Attach site		ing point location	ns, transects,	important features, etc.
	No O			
	No O	Is the Sampled Area within a Wetland?	Yes ● No ○	
ıt? Yes ⊙	No O			
tors:			Socondary Indicato	rs (minimum of 2 required)
num of one required;	check all that apply)		Surface Soil Cr	acks (B6)
num of one required;			Surface Soil Cr	
num of one required;	Water-Stained Leaves (B9) Aquatic Fauna (B13)		Surface Soil Cr Drainage Patte Moss Trim Line	erns (B10)
num of one required;	Water-Stained Leaves (B9)		Drainage Patte	erns (B10)
num of one requirea;	Water-Stained Leaves (B9) Aquatic Fauna (B13))	Drainage Patte	erns (B10) es (B16) ater Table (C2)
num of one requirea;	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15)		Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9)
num of one requirea;	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1)
num of one requirea;	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
·	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7)	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str Geomorphic P Shallow Aquita	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) ard (D3)
rial Imagery (B7) ave Surface (B8)	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) position (D2) ard (D3) hic Relief (D4)
rial Imagery (B7) ave Surface (B8)	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Other (Explain in Remarks)	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str Geomorphic Po Shallow Aquita Microtopograp	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) position (D2) ard (D3) hic Relief (D4)
rial Imagery (B7) ave Surface (B8) Yes No •	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7)	g Living Roots (C3) (C4)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str Geomorphic Po Shallow Aquita Microtopograp	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) position (D2) ard (D3) hic Relief (D4)
rial Imagery (B7) ave Surface (B8)	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Other (Explain in Remarks)	g Living Roots (C3) (C4) illed Soils (C6)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str Geomorphic Po Shallow Aquita Microtopograp FAC-neutral Te	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) position (D2) ard (D3) hic Relief (D4) est (D5)
rial Imagery (B7) ave Surface (B8) Yes No •	Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches):	g Living Roots (C3) (C4) illed Soils (C6)	Drainage Patte Moss Trim Lin Dry Season W Crayfish Burro Saturation Visi Stunted or Str Geomorphic Po Shallow Aquita Microtopograp	erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) position (D2) ard (D3) hic Relief (D4)
	e, etc.): Toeslope Inditions on the site ty Inditions on the site ty	Sec. e, etc.): Toeslope Local relate: Lat.: Inditions on the site typical for this time of year? Inditions on the site typical for this time of year. Inditions on the site typical for this time of year. Inditions on the site typical for this time of year. Inditions on the site typical for this time of year. In	Section, Township, Range: Local relief (concave, convex, respectively) Lat.: Long Inditions on the site typical for this time of year? Yes No No No No Yes No Yes No Yes No Yes No No Yes No And No Yes No And No And No Yes No And No And No And No Yes No And No An	Section, Township, Range: ST

VEGETATION -	Use scientific	names of plants
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VEGETATION - Use scientific names of pla	nts	DominantSpecies?			Sampling Point: an20 wetland			
Tree Stratum (Plot size:)	Absolute % Cover	R		Indicator Status	Dominance Test worksheet:			
 1	0	П	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)			
2		\Box	0.0%		That are obe, thow, of the			
3	0	$\overline{\Box}$	0.0%		Total Number of Dominant Species Across All Strata: 2 (B)			
4			0.0%		Species Across All Strata: 2 (B)			
5			0.0%		Percent of dominant Species			
6			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)			
7			0.0%		Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size:)		= T	otal Cove	r	Total % Cover of: Multiply by:			
	0		0.0%		0BL speci es 10 x 1 = 10			
1	0		0.0%		FACW species 103 x 2 = 206			
2 3	0		0.0%		FAC speci es			
5 4			0.0%		FACU speci es x 4 =0			
5			0.0%		UPL species $0 \times 5 = 0$			
6			0.0%		Column Totals:113 (A)216 (B)			
7	0		0.0%		Prevalence Index = B/A = 1.912			
Herb Stratum (Plot size: 5')	0	= T	otal Cove	r	Hydrophytic Vegetation Indicators:			
			00.004	54004	Rapid Test for Hydrophytic Vegetation			
1. Onoclea sensibilis	45		39.8%	FACW	✓ Dominance Test is > 50%			
2. Impatiens capensis 3. Osmunda cinnamomea		✓	8.8%	FACW	✓ Prevalence Index is ≤3.0 ¹			
A	40		29.2% 8.8%	OBL	☐ Morphological Adaptations ¹ (Provide supporting			
5.Phalaris arundinacea			13.3%	FACW+	data in Remarks or on a separate sheet)			
6.	0		0.0%	TACVV	Problematic Hydrophytic Vegetation ¹ (Explain)			
7			0.0%		¹ Indicators of hydric soil and wetland hydrology must			
8.	0	П	0.0%		be present, unless disturbed or problematic.			
9.	0	П	0.0%		Definitions of Vegetation Strata:			
10	0	П	0.0%		To a Manchaglanta O'r (7.0 au) ar marc'a d'anadar			
11.	0	П	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
12.	0	$\overline{\Box}$	0.0%					
Woody Vine Stratum (Plot size:		= T	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall			
,	0		0.0%		Harb. All harbaccaus (non woody) plants, regardless of			
1	0 0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
2	0		0.0%					
4	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in height.			
4			otal Cove		Height.			
		- ''	otal cove	•				
					Hydrophytic Vegetation Present? Yes No			

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

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an20 wetland

	ription: (Des		the depth	needed to d				onfirm the	absence of indicators.)			
Depth (inches)	. Color (ı	Matrix moist)	_ % -	_ Color (i		dox Featu %	ures Type 1	Loc2	Texture	Remarks		
0-8	10YR	3/2	100%	33101 (1					Loam	Comuno		
8-11	2.5Y	4/2	95%	10YR	4/6	5%	C		Sandy Loam			
8-11	2.51	4/2	95%	TUTK	4/0	5%		IVI	Sandy Loam			
										_		
									-			
									-			
									-			
										_		
¹ Type: C=Con	centration. D	=Depletio	n. RM=Red	uced Matrix, (S=Covere	ed or Coat	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=	Matrix		
Hydric Soil	Indicators:								Indicators for Prof	plematic Hydric Soils : 3		
Histosol ((A1)			Poly	alue Belov	w Surface	(S8) (LRR F	₹,) (LRR K, L, MLRA 149B)		
Histic Epi	pedon (A2)				A 149B)	(00)	1000	N 4465'		dox (A16) (LRR K, L, R)		
Black His	tic (A3)						LRR R, MLF			t or Peat (S3) (LRR K, L, R)		
_	n Sulfide (A4)						I) LRR K, L))	Dark Surface (S			
	Layers (A5)				iy Gieyed eted Matri:	Matrix (F2))		Polyvalue Below Surface (S8) (LRR K, L)			
_	Below Dark S		11)			rface (F6)			☐ Thin Dark Surface (S9) (LRR K, L)			
_	rk Surface (A					Surface (F	7)		☐ Iron-Manganese Masses (F12) (LRR K, L, R)			
	uck Mineral (S				x Depress		,,		Piedmont Floodplain Soils (F19) (MLRA 149B)			
	eyed Matrix (S4)			л Бор. осо				Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy Re									Red Parent Material (TF2)			
	Matrix (S6) face (S7) (LRI	R R MIRA	149R)							rk Surface (TF12)		
									Other (Explain in	ı Remarks)		
³ Indicators o	f hydrophytic	vegetatio	n and wetla	nd hydrology	must be p	oresent, ur	nless disturi	ped or probl	ematic.			
Restrictive L	-	erved):										
Type: b	•								Hydric Soil Present?	Yes ● No ○		
Depth (inc	thes): 11								Hydric Son Present?	res e No C		
Remarks:												

Project/Site: Antrim Wind Project	City/Coun	ty: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC		Sta	te: NH	Sampling Point: an20 upland
Investigator(s): AF JG	Section	n, Township, Range:	S. T.	 R.
Landform (hillslope, terrace, etc.): Hillside		ef (concave, convex, n		Slope: 15.0 % / 8.5 °
Subregion (LRR or MLRA):	Lat.:	Long	 j.:	Datum:
Soil Map Unit Name:			NWI classif	ication:
		Yes No	_	
Are climatic/hydrologic conditions on the site ty			(If no, explain in	
Are Vegetation , Soil , or Hydro	ogy Significantly disturbe	d? Are "Normal	Circumstances" p	oresent? Yes S NO C
Are Vegetation , Soil , or Hydro	ogy naturally problemation	? (If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Attach site		g point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No •			
Hydric Soil Present? Yes	NO S	s the Sampled Area vithin a Wetland?	Yes 🔾 No 🖲)
Wetland Hydrology Present? Yes	No •			
Remarks: (Explain alternative procedures her	e or in a separate report.)			
Maintained ROW				
Hydrology				
Wetland Hydrology Indicators:			0 - 1 - 1 - 1 - 1	()) ()
Primary Indicators (minimum of one required;	check all that apply)			ors (minimum of 2 required)
			Surface Soil C	
Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9)		Drainage Patte	
Saturation (A3)	Aquatic Fauna (B13)		Moss Trim Lin	• •
Water Marks (B1)	Marl Deposits (B15)			ater Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)		Crayfish Burro	
Drift deposits (B3)	Oxidized Rhizospheres along L			ible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)			essed Plants (D1)
Iron Deposits (B5)	Recent Iron Reduction in Tilled	I Soils (C6)	Geomorphic P	
	☐ Thin Muck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface (B8)			FAC-neutral T	est (D5)
Field Observations:				
Surface Water Present? Yes No •	Depth (inches):			
Water Table Present? Yes O No •	Depth (inches):			
Saturation Present? (includes capillary fringe) Yes No •	Depth (inches):	Wetland Hydr	ology Present?	Yes ○ No •
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous	s inspections), if avail	able:	
Jessinge Neseraea Bata (etream gaage, meint	ornig tron, donar priotoc, proticus			
Remarks:				

vegeration - ose scientific fiames of pic	Sampling Point: an20 upland				
Tree Stratum (Plot size:)	Absolute % Cover	Re	ecies? _ el.Strat. over	Indicator Status	Dominance Test worksheet:
	0	\Box	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
1		\Box	0.0%		That are OBL, FACW, OF FAC.
2		Н	0.0%		Total Number of Dominant
3					Species Across All Strata: 2 (B)
4			0.0%		Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC:(A/B)
6			0.0%		
7	0	Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cover		Total % Cover of: Multiply by:
1. Rhus copallinum	25	V	100.0%	NI	0BL species 0 x 1 = 0
2.		\Box	0.0%		FACW species x 2 = 0
ર ૧	0	\Box	0.0%		FAC species0 x 3 =0
3 4.			0.0%		FACU species 10 x 4 = 40
			0.0%		UPL speci es $\frac{95}{100}$ x 5 = $\frac{475}{100}$
^					Column Totals: 105 (A) 515 (B)
6			0.0%		(1)
7	0		0.0%		Prevalence Index = B/A = 4.905
Herb Stratum (Plot size: 5')	25	= Tc	otal Cover		Hydrophytic Vegetation Indicators:
1.Dennstaedtia punctilobula	95	✓	90.5%	UPL	Rapid Test for Hydrophytic Vegetation
2.Rubus alumnus	10		9.5%	FACU-	☐ Dominance Test is > 50%
3.			0.0%		Prevalence Index is ≤3.0 ¹
4.	0	\Box	0.0%		Morphological Adaptations ¹ (Provide supporting
5.	0		0.0%		data in Remarks or on a separate sheet)
6			0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)
7					¹ Indicators of hydric soil and wetland hydrology must
8.			0.0%		be present, unless disturbed or problematic.
9.			0.0%		Definitions of Vegetation Strata:
	0		0.0%		Jennicons or regeration strata.
10			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter
11	0_		0.0%		at breast height (DBH), regardless of height.
12	0	Ш	0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Stratum (Plot size:)	105	= To	otal Cover		greater than 3.28 ft (1m) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3	0	$\overline{\Box}$	0.0%		Mandada Allandada and a sanata than 0.00 ft in
4	0	\Box	0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
т.		 = To	otal Cover		
					Hydrophytic Vegetation Present? Yes No No
Remarks: (Include photo numbers here or on a separate si	neet.)				

Dominant

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an20 upland

Profile Desci	ription: (Desc	ribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)	
Depth (inches)		Watrix	_ 0,	Redox Features		S
	Color (m		%	Color (moist) % Type 1 Loc²		Remarks
0-5	10YR	3/2	100%		Fine Sandy Loam	
5-10	10YR	4/4	100%		Fine Sandy Loam	
10-18	10YR	5/8	100%		Fine Sandy Loam	
				·		
						<u> </u>
				·		
				. —————————		
					·	
¹ Type: C=Con	ncentration. D=	Depletio	n. RM=Red	duced Matrix, CS=Covered or Coated Sand Grains 2Local	ation: PL=Pore Lining. M=Matrix	
Hydric Soil	Indicators:				Indicators for Problematic Hy	dric Soils: 3
Histosol ((A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, I	
	pedon (A2)			MLRA 149B) Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LF	
Black His				Loamy Mucky Mineral (F1) LRR K, IV	5 cm Mucky Peat or Peat (S3	
	n Sulfide (A4)			Loamy Gleyed Matrix (F2)	☐ Dark Surface (S7) (LRR K, L)	
	Layers (A5)	C (A	44)	Depleted Matrix (F3)	Polyvalue Below Surface (S8)	(LRR K, L)
	Below Dark Surk Surface (A12		11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR	
	uck Mineral (S1	•		Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12	
	eyed Matrix (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F1	
Sandy Re		7)			Mesic Spodic (TA6) (MLRA 14	14A, 145, 149B)
	Matrix (S6)				Red Parent Material (TF2)	·F12)
	face (S7) (LRR	R, MLRA	(149B)		✓ Very Shallow Dark Surface (T✓ Other (Explain in Remarks)	F12)
3Indicators o	f hydronhytic y	enetatio	n and wetl:	and hydrology must be present, unless disturbed or probl		
			n and well	ind flydrology flust be present, diffess disturbed of problem	ematic.	
	ayer (if obse	rvea):				
Type: Depth (inc	hoc).				Hydric Soil Present? Yes	No ●
	<u></u>					
Remarks:						



AN20 Wetland



AN20 Upland

Project/Site: Antrim Wind Project			City/Cour	nty: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable E	nergy, LLC			Sta	ite: NH	Sampling Point: an21 wetland
Investigator(s): AF JG			Section	n, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):	Toeslope		_	ef (concave, convex, r		Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA):		Lat.:		Long	<u> </u>	Datum:
Soil Map Unit Name:				0 0	INWI CIASSII	ication: PEM
Are climatic/hydrologic conditions of	n the site ty	pical for this time of ye	ear?	Yes No	(If no, explain in	
Are Vegetation, Soil	, or Hydrold	ogy 🗌 significant	ly disturbe	ed? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil	, or Hydrold	ogy 🗌 naturally p	roblemati	c? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - At			amplin	g point locatior	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?		No O				
Hydric Soil Present?	Yes 💿	No O		s the Sampled Area vithin a Wetland?	Yes 💿 No 🗆)
Wetland Hydrology Present?	Yes 💿	No O				
Hydrology						
Wetland Hydrology Indicators:					Secondary Indicate	ors (minimum of 2 required)
Primary Indicators (minimum of or	ne required;	check all that apply)			Surface Soil C	
Surface Water (A1)		Water-Stained Leav	ves (B9)		Drainage Patte	
✓ High Water Table (A2)		Aquatic Fauna (B13			Moss Trim Lin	
Saturation (A3)		Marl Deposits (B15	j)		Dry Season W	ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide C	Odor (C1)		Crayfish Burro	ws (C8)
Sediment Deposits (B2)		Oxidized Rhizosphe	-			ble on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	•	•		essed Plants (D1)
☐ Algal Mat or Crust (B4)☐ Iron Deposits (B5)		Recent Iron Reduc		d Soils (C6)	Geomorphic P	
Inundation Visible on Aerial Image	rv (B7)	☐ Thin Muck Surface	` '		Shallow Aquita	ara (D3) hic Relief (D4)
Sparsely Vegetated Concave Surface	•	Uther (Explain in R	emarks)		FAC-neutral To	
Field Observations:						
Surface Water Present? Yes		Depth (inches):				
Water Table Present? Yes	No O	Depth (inches):	3	Wetlend I had	rology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes		Depth (inches):	0			res ⊕ inu ⊖ ————————————————————————————————————
Describe Recorded Data (stream garden Remarks:	auge, monito	oring well, aerial photo	os, previou	is inspections), if avai	lable:	

VEGETATION - Use scientific names of p	iants		ominant pecies?		Sampling Point: an21 wetland
Tree Stratum (Plot size:)	Absolute % Cover		el.Strat. over	Indicator Status	Dominance Test worksheet:
 1	0	$\overline{\Box}$	0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
7		\Box	0.0%		That are obt, FACW, or FAC.
2		\Box	0.0%		Total Number of Dominant
3			0.0%		Species Across All Strata: 5 (B)
4					Percent of dominant Species
5			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
<u>6</u>			0.0%		
7	0	Ш	0.0%		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cove	r	Total % Cover of: Multiply by:
1. Spiraea tomentosa	5	~	33.3%	FACW	OBL species 75 x 1 = 75 FACW species 44 x 2 = 88
2. Acer rubrum		\checkmark	33.3%	FAC	
3. Spiraea alba		~	33.3%	FACW+	1 NO SPECIOS
4.			0.0%		FACU species $0 \times 4 = 0$
5			0.0%		UPL species x 5 =0
			0.0%		Column Totals: 124 (A) 178 (B)
o 7			0.0%		Prevalence Index = B/A = 1.435
		_ = To	otal Cove	r	Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5')					Rapid Test for Hydrophytic Vegetation
1. Osmunda cinnamomea	5		4.6%	FACW	✓ Dominance Test is > 50%
2. Scirpus cyperinus	8		7.3%	FACW+	l —
3. Carex scoparla			0.9%	FACW	✓ Prevalence Index is ≤3.0 ¹
4.Carex crinita		~	45.9%	OBL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.Onoclea sensibilis			18.3%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
6.Equisetum fluviatile	25	V	22.9%	OBL	
7.			0.0%		¹ Indicators of hydric soil and wetland hydrology must
8.	0		0.0%		be present, unless disturbed or problematic.
9.	0		0.0%		Definitions of Vegetation Strata:
10.			0.0%		T Mondy plants 2 in (7.6 cm) or more in diameter
 11.			0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.			0.0%		at 2,0000 to 1,000
		 = To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)			2.00/		
1			0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2			0.0%		
			0.0%		Woody vine - All woody vines greater than 3.28 ft in
4			-		height.
		= 10	otal Cove	r	
					Hydrophytic Vegetation Present? Yes No
					Present:
					<u>I</u>
Remarks: (Include photo numbers here or on a separate s	sheet.)				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an21 wetland

	iption: (De		the depth	needed to d				onfirm the	absence of indicators.)				
Depth (inches)	Color (ı	Matrix	- %	_ Color (n		dox Featu %		Loc²	Texture	Remarks			
0-9	10YR	3/2	100%		ioist)		- Type		Loam	Remarks			
9-14	2.5Y	4/2	95%	10YR	4/6	5%	C		Fine Sandy Loam				
										_			
									-				
									-				
									-				
							_			_			
¹ Type: C=Cond	entration. D	=Depletio	n. RM=Red	uced Matrix. C	S=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=N	 Matrix			
Hydric Soil I									-	2			
Histosol (A				Polvv	alue Belov	w Surface (S8) (LRR F	₹,		iematic riyunc 30iis .			
_ `	pedon (A2)			MLRA	149B)	., our doo (,00) (2	-1		(LRR K, L, MLRA 149B)			
Black Hist				Thin	Dark Surfa	ace (S9) (l	RR R, MLF	RA 149B)		ox (A16) (LRR K, L, R)			
	Sulfide (A4)			Loam	y Mucky N	Mineral (F1) LRR K, L))		or Peat (S3) (LRR K, L, R)			
	Layers (A5)			Loam	y Gleyed	Matrix (F2)			Dark Surface (S7)				
_	Below Dark S	Surface (A	11)	Deple	ted Matrix	x (F3)			Polyvalue Below Surface (S8) (LRR K, L)				
	k Surface (A					rface (F6)			Thin Dark Surface (S9) (LRR K, L)				
	ck Mineral (S			Deple	ted Dark	Surface (F	7)		☐ Iron-Manganese Masses (F12) (LRR K, L, R)				
	yed Matrix (Redo	x Depress	ions (F8)			☐ Piedmont Floodplain Soils (F19) (MLRA 149B) ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy Red									Red Parent Material (TF2)				
Stripped N									☐ Red Parent Material (1F2) ☐ Very Shallow Dark Surface (TF12)				
☐ Dark Surfa	ace (S7) (LRI	R R, MLRA	149B)						Other (Explain in				
³ Indicators of	hydronhytic	vegetatio	n and wetla	nd hydrology	must he n	resent un	less disturt	ned or probl		remarks)			
			Trana wette	ina nyarology	must be p	reserit, air	icos distari	sea or probl	ornatio.				
Restrictive La	-	erved):											
Type: bo									Hydric Soil Present?	Yes ● No ○			
Depth (inch	nes): 14									103 0 110 0			
Remarks:													

Project/Site: Antrim Wind Project			City/Cour	nty: Antrim		Sampling Date: 16-Aug-11
Applicant/Owner: Eolian Renewable Ene	rgy, LLC			Sta	te: NH	Sampling Point: an21 upland
Investigator(s): AF JG			Sectio	on, Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.):	illside		_	ef (concave, convex, r		Slope: 18.0 % / 10.2 °
Subregion (LRR or MLRA):		Lat.:		Long		Datum:
Soil Map Unit Name:					NWI classif	ication:
Are climatic/hydrologic conditions on	the site typ	pical for this time of ye	ear?	Yes No	(If no, explain in	•
Are Vegetation \square , Soil \square ,	or Hydrolo	ogy 🗌 significant	ly disturbe	ed? Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil,	or Hydrolo	ogy 🗌 naturally p	roblematio	c? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Atta			amplin	g point location	ns, transects,	important features, etc.
, , , ,		No •				
3		No •		s the Sampled Area vithin a Wetland?	Yes \bigcirc No $lacktriangle$	
Wetland Hydrology Present?	Yes 🔾	No •				
Hydrology						
Hydrology						
Wetland Hydrology Indicators:	roquirod: (shock all that apply)				ors (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)	required, t	Water-Stained Lea	(DO)		Surface Soil Co	
High Water Table (A2)		Aquatic Fauna (B13			Moss Trim Lin	
Saturation (A3)		Marl Deposits (B15				dater Table (C2)
Water Marks (B1)		Hydrogen Sulfide C			Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosphe		iving Roots (C3)		ible on Aerial Imagery (C9)
Drift deposits (B3)		Presence of Reduc	-	-	Stunted or Str	ressed Plants (D1)
☐ Algal Mat or Crust (B4)		Recent Iron Reduc	tion in Tilled	d Soils (C6)	Geomorphic P	osition (D2)
Iron Deposits (B5)		☐ Thin Muck Surface	(C7)		Shallow Aquita	ard (D3)
Inundation Visible on Aerial Imagery (Other (Explain in R	Remarks)			phic Relief (D4)
Sparsely Vegetated Concave Surface ((B8)				FAC-neutral To	est (D5)
Field Observations:						
Surface Water Present? Yes	No 💿	Depth (inches):				
Water Table Present? Yes	No 💿	Depth (inches):				Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No •	Depth (inches):		Wetland Hydi	rology Present?	Yes ∪ No ♥
Describe Recorded Data (stream gauge	ge, monito	ring well, aerial photo	s, previou	is inspections), if avai	lable:	
Remarks:						
Remarks.						

VEGETATION - Use scientific names of plants	Dominant Species?	_	Sampling

vegeration - use scientific names of plan	113		ominant pecies?		Sampling Point: an21 upland
(District	Absolute	Re	el.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Cc	over	Status	Number of Dominant Species
1			0.0%		That are OBL, FACW, or FAC:1 (A)
2			0.0%		Total Number of Dominant
3			0.0%		Species Across All Strata: 6 (B)
4	0		0.0%		Percent of dominant Species
5 6.	0	П	0.0%		That Are OBL, FACW, or FAC: 16.7% (A/B)
6 7	0	П	0.0%		Prevalence Index worksheet:
		 = To	otal Cove		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15')					OBL species 0 x 1 = 0
1. Acer rubrum	5	✓	20.0%	FAC	FACW species 0 x 2 = 0
2. Gaylussacia baccata	5	✓	20.0%	FACU	FAC species 8 x 3 = 24
3. Acer saccharum		✓	20.0%	FACU-	FACU species 28 x 4 = 112
4. Fagus grandifolia	5	✓✓	20.0%	FACU	UPL speci es 95 x 5 = 475
5. Quercus rubra 6.			20.0%	FACU-	Column Totals: 131 (A) 611 (B)
o 7.	0		0.0%		
		 _ To	otal Cove		Prevalence Index = B/A = 4.664
Herb Stratum (Plot size: 5')			otal covel		Hydrophytic Vegetation Indicators:
1.Dennstaedtia punctilobula	95	✓	89.6%	UPL	Rapid Test for Hydrophytic Vegetation
2. Trientalis borealis	3		2.8%	FAC	Dominance Test is > 50% Prevalence Index is ≤3.0 ¹
3. Solidago canadensis	8		7.5%	FACU	Morphological Adaptations ¹ (Provide supporting
4	0		0.0%		data in Remarks or on a separate sheet)
5	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
<u>6</u>	0		0.0%		1
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8 9.			0.0%		Definitions of Vegetation Strata:
10.			0.0%		-
11	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12.	0	П	0.0%		at breast height (BBH), regardless of height.
		 = To	otal Cove		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall
Woody Vine Stratum (Plot size:)			otal covel		greater than 3.28 it (1111) tall
1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of
2	0		0.0%		size, and woody plants less than 3.28 ft tall.
3	0		0.0%		Woody vine - All woody vines greater than 3.28 ft in
4		Ш	0.0%		height.
	:	= To	otal Cove	-	
					Hydrophytic
					Vegetation
					Present? Yes V NO V
Danisalis (Include abote acceptant	-4.)				
Remarks: (Include photo numbers here or on a separate she	el.)				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an21 upland

Profile Desci	ription: (Des	scribe to	the depth	needed to document the indicator or confirm the	absence of indicators.)
Depth (inches)	. O-los (s	Matrix	_ 0,	Redox Features	- T Domonto
	Color (r		%	Color (moist) % Type 1 Loc²	Texture Remarks
0-4	10YR	3/2	100%		Fine Sandy Loam
4-9	10YR	4/6	100%		Fine Sandy Loam
			-		
					·
				·	
		=Depletio	ın. RM=Rec	duced Matrix, CS=Covered or Coated Sand Grains ² Loca	<u> </u>
Hydric Soil					Indicators for Problematic Hydric Soils : 3
Histosol (Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pedon (A2)			Thin Dark Surface (S9) (LRR R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black His				Loamy Mucky Mineral (F1) LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	Sulfide (A4)			Loamy Gleyed Matrix (F2)	Dark Surface (S7) (LRR K, L)
	Layers (A5)	/^	1	Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)
	Below Dark S		.11)	Redox Dark Surface (F6)	Thin Dark Surface (S9) (LRR K, L)
	rk Surface (A1	•		Depleted Dark Surface (F7)	Iron-Manganese Masses (F12) (LRR K, L, R)
	uck Mineral (S			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)
	eyed Matrix (S	S4)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped	Matrix (S6)				Red Parent Material (TF2)
	matrix (56) face (S7) (LRF	DD MIRA	\ 1/QR)		☐ Very Shallow Dark Surface (TF12)
					Other (Explain in Remarks)
³ Indicators o	f hydrophytic	vegetatio	n and wetla	and hydrology must be present, unless disturbed or probl	lematic.
Restrictive L	ayer (if obs	erved):			
Type:					
Depth (inc	ches):				Hydric Soil Present? Yes ○ No ●
Remarks:					



AN21 Wetland



AN21 Upland

Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Ene	rgy, LLC		Sta	te: NH	Sampling Point: an22 wetland
Investigator(s): AF JG		Section, 1	Γownship, Range:	S. T.	R.
Landform (hillslope, terrace, etc.):	illside		concave, convex, n		Slope: 5.0 % / 2.9 °
Subregion (LRR or MLRA):		Lat.:	Long		Datum:
				-	
Soil Map Unit Name:				— INVVI CIASSII	ication: PSS
Are climatic/hydrologic conditions on	the site typical for thi	s time of year? Yo	es No	(If no, explain in	•
Are Vegetation , Soil ,	or Hydrology	significantly disturbed?	Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation . , Soil . ,	or Hydrology	naturally problematic?	(If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Atta	ch site map sh	owing sampling p	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes No				
Hydric Soil Present?	Yes No		e Sampled Area in a Wetland?	Yes ● No C)
Wetland Hydrology Present?	Yes No				
Remarks: (Explain alternative proce	dures here or in a ser	arate report.)			_
Hydrology					
Wetland Hydrology Indicators:				Secondary Indicato	ors (minimum of 2 required)
Primary Indicators (minimum of one	required; check all th	at apply)		Surface Soil C	racks (B6)
Surface Water (A1)		-Stained Leaves (B9)		Drainage Patte	
High Water Table (A2)		c Fauna (B13)		Moss Trim Lin	• •
Saturation (A3)		eposits (B15)			dater Table (C2)
Water Marks (B1)		gen Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2) Drift deposits (B3)		ed Rhizospheres along Livin	g Roots (C3)		ible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		nce of Reduced Iron (C4)	:!- (C()	Geomorphic P	ressed Plants (D1)
Iron Deposits (B5)		t Iron Reduction in Tilled So	olis (Co)	Shallow Aquita	
Inundation Visible on Aerial Imagery ((57)	Muck Surface (C7)			phic Relief (D4)
Sparsely Vegetated Concave Surface ((Explain in Remarks)		FAC-neutral Te	
Field Observations: Surface Water Present? Yes	No O Dept	th (inches):			
_			_		
		th (inches):	Wetland Hydr	ology Present?	Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	No O Dept	th (inches): 0			
Describe Recorded Data (stream gauge	ge, monitoring well, a	nerial photos, previous in	nspections), if avail	able:	
Remarks:					

Dominant Sampling Point: an22 wetland Species? Absolute Rel.Strat. Indicator **Dominance Test worksheet:** Tree Stratum (Plot size: _____) Cover Status % Cover Number of Dominant Species 1. ____ 0 0.0% That are OBL, FACW, or FAC: (A) 2. 0 0.0% **Total Number of Dominant** 3. _____ 0 0.0% (B) Species Across All Strata: 4. 0 0.0% Percent of dominant Species 5. 0.0% 100.0% (A/B) That Are OBL, FACW, or FAC: 0.0% 6. 0 0 0.0% Prevalence Index worksheet: Total % Cover of: Multiply by: 0 = Total Cover Sapling/Shrub Stratum (Plot size: 15' OBL species x 1 = 8 1. Fraxinus pennsylvanica 10 20.8% FACW 110 FACW species x 2 =2. Acer rubrum 25 52.1% FAC 36 108 FAC species 3. Spiraea tomentosa 5 10.4% **FACW** 0 0 FACU species 4. Viburnum lentago 8 16.7% FAC 0 0 UPL species 5. 0 0.0% 99 (B) 226 Column Totals: (A) 6. 0 0.0% 7. 0 0.0% Prevalence Index = B/A = 2.283 = Total Cover 48 Herb Stratum (Plot size: 5') **Hydrophytic Vegetation Indicators:** Rapid Test for Hydrophytic Vegetation 1. Onoclea sensibilis 49.0% FACW 25 ✓ Dominance Test is > 50% 2.0smunda cinnamomea 15 29.4% FACW ✓ Prevalence Index is ≤3.0 ¹ 3.Carex crinita 8 15.7% OBL Morphological Adaptations 1 (Provide supporting 4. Equisetum arvense 3 5.9% FAC data in Remarks or on a separate sheet) 0 0.0% Problematic Hydrophytic Vegetation ¹ (Explain) 6. 0 0.0% 7. ¹ Indicators of hydric soil and wetland hydrology must 0 0.0% be present, unless disturbed or problematic. 8. 0 0.0% **Definitions of Vegetation Strata:** 9. 0 0.0% 10. 0 0.0% Tree - Woody plants, 3 in. (7.6 cm) or more in diameter 11. 0 0.0% at breast height (DBH), regardless of height. 12. 0 0.0% Sapling/shrub - Woody plants less than 3 in. DBH and 51 = Total Cover Woody Vine Stratum (Plot size: _____) greater than 3.28 ft (1m) tall... 0.0% Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 0 0.0% 2.____ 0 0.0% Woody vine - All woody vines greater than 3.28 ft in 0 0.0% height. 0 = Total Cover Hydrophytic Vegetation No O Yes Present?

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

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: an22 wetland

Profile Desc Depth	ription: (Des	scribe to Matrix	the depth	needed to		t the indic		onfirm the	absence of indicators.)		
(inches)	Color (r		_ %	Color (*uox reatu ************************************	Type 1	Loc2	- Texture	Remarks	
0-8	10YR	3/2	100%						Loam		
8-15	2.5Y	4/2	90%	10YR	5/8	10%	С	M	Fine Sandy Loam		
									-		
									-		
									-		
						_			-		
										_	
¹ Type: C=Cor	ncentration. D	=Depletio	n. RM=Red	uced Matrix,	CS=Cover	ed or Coate	ed Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=I	Matrix	
Hydric Soil	Indicators:								Indicators for Prob	lematic Hydric Soils : 3	
Histosol				Poly	value Belo	w Surface ((S8) (LRR F	₹,		(LRR K, L, MLRA 149B)	
	ipedon (A2)				A 149B) Dark Surf	ace (S9) (L	DD D MIE	ρΛ 1/OR\	_	ox (A16) (LRR K, L, R)	
Black His						Mineral (F1)			5 cm Mucky Peat	or Peat (S3) (LRR K, L, R)	
	n Sulfide (A4) Layers (A5)					Matrix (F2)			Dark Surface (S7		
	Below Dark S	Surface (A	.11)		eted Matri				☐ Polyvalue Below Surface (S8) (LRR K, L)		
	rk Surface (A1		,	Red	ox Dark Su	urface (F6)			Thin Dark Surface		
☐ Sandy M	uck Mineral (S	51)				Surface (F	7)		☐ Iron-Manganese Masses (F12) (LRR K, L, R)☐ Piedmont Floodplain Soils (F19) (MLRA 149B)		
	eyed Matrix (S	S4)		☐ Red	ox Depress	sions (F8)				6) (MLRA 144A, 145, 149B)	
	edox (S5)								Red Parent Mater		
	Matrix (S6)		4.400)						Very Shallow Dark Surface (TF12)		
	face (S7) (LRF								Other (Explain in	Remarks)	
³ Indicators of	of hydrophytic	vegetatio	n and wetla	ind hydrology	must be p	present, un	less disturb	ed or probl	lematic.		
Restrictive I	ayer (if obs	erved):									
Type: s	tony								Uhadwia Cail Dwaaamt?	V (A) N (
Depth (inc	ches):_15								Hydric Soil Present?	Yes ● No ○	
Remarks:											

Project/Site: Antrim Wind Project		City/County:	Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Ene	rgy, LLC		Stat	te: NH	Sampling Point: AN22 Upland
Investigator(s): AF JG		Section. 1	Township, Range:	S. T.	R.
Landform (hillslope, terrace, etc.): H	lillside		concave, convex, n		Slope: 12.0 % / 6.8 °
Subregion (LRR or MLRA):		Lat.:	Long	·	Datum:
				-	
Soil Map Unit Name:				NWI classif	ication:
Are climatic/hydrologic conditions on	the site typical for this	time of year? You	es No	(If no, explain in	•
Are Vegetation \square , Soil \square ,	or Hydrology	gnificantly disturbed?	Are "Normal	Circumstances" p	oresent? Yes No
Are Vegetation, Soil,	or Hydrology 🔲 na	aturally problematic?	(If needed, e	explain any answe	ers in Remarks.)
Summary of Findings - Atta	<u> </u>	wing sampling p	ooint location	s, transects,	important features, etc.
3 . 3 . 0	Yes O No O				
1	Yes O No O		ne Sampled Area nin a Wetland?	Yes \bigcirc No $lacktriangle$	
Wetland Hydrology Present?	Yes ○ No •				
lladed and					
Hydrology					
Wetland Hydrology Indicators:	roquirod, abook all that	t annly)			ors (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)				Surface Soil Co	
High Water Table (A2)		tained Leaves (B9) Fauna (B13)		☐ Drainage Patte	
Saturation (A3)		posits (B15)			ater Table (C2)
Water Marks (B1)		en Sulfide Odor (C1)		Crayfish Burro	
Sediment Deposits (B2)		I Rhizospheres along Livin	ig Roots (C3)		ible on Aerial Imagery (C9)
☐ Drift deposits (B3)		e of Reduced Iron (C4)		Stunted or Str	essed Plants (D1)
Algal Mat or Crust (B4)	Recent I	Iron Reduction in Tilled So	oils (C6)	Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		ck Surface (C7)		Shallow Aquita	
Inundation Visible on Aerial Imagery		Explain in Remarks)		Microtopograp	
Sparsely Vegetated Concave Surface	(B8)			FAC-neutral To	est (D5)
Field Observations:					
Surface Water Present? Yes		(inches):	_		
Water Table Present? Yes	No O Depth	(inches):			Yes ○ No •
Saturation Present? (includes capillary fringe) Yes	No Oepth	(inches):	Wetland Hydr	ology Present?	Yes ○ NO ⑤
Describe Recorded Data (stream gau-	ge, monitoring well, aei	rial photos, previous ir	nspections), if avail	able:	
Remarks:					

VEGETATION - Use scientific names of p			minant cies?		Sampling Point: AN22 Upland		
Tree Stratum (Plot size: 30')	Absolute % Cover	Rel	.Strat.	Indicator Status	Dominance Test worksheet:		
1 _ Tsuga canadensis	20	~	33.3%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)		
2. Betula papyrifera			16.7%	FACU			
3. Fagus grandifolia		✓	33.3%	FACU	Total Number of Dominant Species Across All Strata: 6 (B)		
1. Acer rubrum	10		16.7%	FAC	Species Across Air Strata.		
5.			0.0%		Percent of dominant Species		
5			0.0%		That Are OBL, FACW, or FAC: 16.7% (A/B)		
7.	0		0.0%		Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15')		= Tot	al Cove	r	Total % Cover of: Multiply by:		
· · · · · · · · · · · · · · · · ·	25	✓	50.0%	FAC	0BL species 0 x 1 = 0		
Betula alleghaniensis Acer pensylvanicum		<u> </u>			FACW species 0 x 2 = 0		
2. Acer pensylvanicum 3. Fagus grandifolia			30.0%	FACU	FAC species45		
		_	20.0%	FACU	FACU speci es 90 x 4 = 360		
4	0	<u> </u>	0.0%		UPL species $\frac{66}{}$ x 5 = $\frac{330}{}$		
5		Н-	0.0%		Column Totals: 201 (A) 825 (B)		
5		<u> </u>	0.0%				
7		Ш_	0.0%		Prevalence Index = B/A = 4.104		
Herb Stratum (Plot size: 5')	= Total Cover				Hydrophytic Vegetation Indicators:		
1.Trientalis borealis	10		11.0%	FAC	Rapid Test for Hydrophytic Vegetation		
2. Dennstaedtia punctilobula	66		72.5%	UPL	☐ Dominance Test is > 50%		
3. Aralia nudicaulis		_	16.5%	FACU	Prevalence Index is ≤3.0 ¹		
4.	0		0.0%	TACO	☐ Morphological Adaptations ¹ (Provide supporting		
5		Н-	0.0%		data in Remarks or on a separate sheet)		
6	0	<u> </u>	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
7		H-	0.0%		¹ Indicators of hydric soil and wetland hydrology must		
8.	0	H-	0.0%		be present, unless disturbed or problematic.		
9.	0	<u> </u>	0.0%		Definitions of Vegetation Strata:		
0.		H-	0.0%				
		Н-	0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
2.		H-	0.0%		at bleast height (DBH), regardless of height.		
·					Sapling/shrub - Woody plants less than 3 in. DBH and		
Woody Vine Stratum (Plot size:)	91	= 10t	al Cove	r	greater than 3.28 ft (1m) tall		
 1	0		0.0%		Herb - All herbaceous (non-woody) plants, regardless of		
2			0.0%		size, and woody plants less than 3.28 ft tall.		
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in		
4			0.0%		height.		
		– Tot =	al Cove	r			
				-			
					Hydrophytic		
					Vegetation Present? Yes No •		
					Liezelit: 100 0 110 0		
					1		

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN22 Upland

Depth (inches)		Matrix	_ % -		dox Features % Ty	pe 1 Loc²	Texture	Domorko		
	Color (n			Color (moist)	- ⁷ 6 IY	pe Loc-		Remarks		
0-9	10YR	3/2	100%				Loam			
9-13	2.5Y	5/3	100%				Very Fine Sandy Loan	<u> </u>		
							_			
							_			
							_			
							_			
							_			
Type: C=Coi	ncentration. D	=Depletio	n. RM=Redu	uced Matrix, CS=Covere	ed or Coated Sar	nd Grains ² Lo	ocation: PL=Pore Lining. N	 ∕I=Matrix		
Hydric Soil								oblematic Hydric Soils: 3		
Histosol	(A1)			Polyvalue Belov	v Surface (S8) (LRR R,				
☐ Histic Ep	ipedon (A2)			MLRA 149B)				10) (LRR K, L, MLRA 149B) Redox (A16) (LRR K, L, R)		
☐ Black His	tic (A3)				ace (S9) (LRR R			eat or Peat (S3) (LRR K, L, R)		
Hydroge	n Sulfide (A4)				Mineral (F1) LRR	K, L)		(S7) (LRR K, L)		
Stratified	Layers (A5)			Loamy Gleyed				w Surface (S8) (LRR K, L)		
	Below Dark S		11)	Depleted Matrix				face (S9) (LRR K, L)		
	rk Surface (A1	•		Redox Dark Su			☐ Iron-Mangane	se Masses (F12) (LRR K, L, R)		
	uck Mineral (S			Redox Depress			Piedmont Floo	Piedmont Floodplain Soils (F19) (MLRA 149B)		
	eyed Matrix (S	64)		☐ Redox Depress	10113 (1 0)		Mesic Spodic ((TA6) (MLRA 144A, 145, 149B)		
	edox (S5)						Red Parent Material (TF2)			
	Matrix (S6) face (S7) (LRR	D MID	\ 140P\				Very Shallow Dark Surface (TF12)			
							Other (Explain	in Remarks)		
³ Indicators of	of hydrophytic	vegetatio	n and wetla	nd hydrology must be p	resent, unless d	isturbed or pro	blematic.			
Restrictive I	ayer (if obse	erved):								
Type: _b	oulders									
Depth (in	ches): 13						Hydric Soil Presen	t? Yes O No 💿		
Remarks:										



AN22 Wetland



AN22 Upland

Project/Site: Antrim Wind Project			City/Coun	nty: Antrim		Sampling Date: 17-Aug-11
Applicant/Owner: Eolian Renewable Ene	ergy, LLC			Sta	te: NH	Sampling Point: AN23 Wetland
Investigator(s): AF JG			Sectio	n, Township, Range:	S. T.	
Landform (hillslope, terrace, etc.):			_	ef (concave, convex, r		Slope: 12.0 % / 6.8 °
_	mside	l at .	2004110110			
Subregion (LRR or MLRA):		Lat.:		Lonç	-	Datum:
Soil Map Unit Name:					NWI classifi	cation: PFO/PSS
Are climatic/hydrologic conditions on	the site typ	pical for this time of y	ear?	Yes ● No ○	(If no, explain in	·
Are Vegetation . , Soil .	or Hydrold	ogy 🗌 significant	ly disturbe	d? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil,	or Hydrolo	ogy 🗌 naturally p	problemation	? (If needed,	explain any answe	ers in Remarks.)
Summary of Findings - Atta	ach site	map showing s	sampling	g point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?		No O				
Hydric Soil Present?		No O		s the Sampled Area vithin a Wetland?	Yes No	
Wetland Hydrology Present?	Yes	No O				
Hydrology						
Wetland Hydrology Indicators:	roquirod	chack all that apply)				rs (minimum of 2 required)
Primary Indicators (minimum of one Surface Water (A1)	required, t		(DO)		Surface Soil Co	
High Water Table (A2)		✓ Water-Stained Lea✓ Aquatic Fauna (B1	, ,		☐ Drainage Patte	
Saturation (A3)		Marl Deposits (B15				ater Table (C2)
Water Marks (B1)		Hydrogen Sulfide (Crayfish Burro	
Sediment Deposits (B2)		Oxidized Rhizosph		iving Roots (C3)		ble on Aerial Imagery (C9)
☐ Drift deposits (B3)		Presence of Reduc	-	-		essed Plants (D1)
☐ Algal Mat or Crust (B4)		Recent Iron Reduc			Geomorphic P	osition (D2)
☐ Iron Deposits (B5)		☐ Thin Muck Surface	e (C7)		Shallow Aquita	ard (D3)
Inundation Visible on Aerial Imagery		Other (Explain in F	Remarks)		Microtopograp	
Sparsely Vegetated Concave Surface	(B8)				FAC-neutral Te	est (D5)
Field Observations:						
Surface Water Present? Yes	No 💿	Depth (inches):				
Water Table Present? Yes	No 💿	Depth (inches):				Yes ● No ○
Saturation Present? (includes capillary fringe) Yes	No O	Depth (inches):	0	Wetland Hydi	rology Present?	Yes ♥ NO ∪
Describe Recorded Data (stream gau	ge, monito	ring well, aerial photo	os, previou	s inspections), if avai	lable:	
Remarks:						

VEGETATION - Use scientific names of p	Dominant Species?				Sampling Point: AN23 Wetland				
Tree Stratum (Plot size: 30')	Absolute % Cover	Re		Indicator Status	Dominance Test worksheet:				
1 Fraxinus pennsylvanica	33	V	40.7%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)				
2. Acer rubrum	22	~	40.7%	FAC					
3. Betula alleghaniensis	10		18.5%	FAC	Total Number of Dominant Species Across All Strata: 5 (B)				
4.			0.0%		Species Across Air Strata.				
5.	0		0.0%		Percent of dominant Species That Are ORL FACING or FAC: 100.0% (A/B)				
6			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)				
7	0		0.0%		Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: 15')		= To	otal Cove	r	Total % Cover of: Multiply by:				
1 Fravinus poppaulyanias	8	~	28.6%	FACW	0BL species 5 x 1 = 5				
Contract tomortons	15	✓	53.6%	FACW	FACW species 139 x 2 = 278				
O Dinous standards			17.9%		FAC species				
A			0.0%	FACU	FACU species5 x 4 =20				
			0.0%		UPL species x 5 =				
5			0.0%		Column Totals: 205 (A) 471 (B)				
6			0.0%						
7					Prevalence Index = B/A = 2.298				
Herb Stratum (Plot size: 5')	= Total Cover				Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation				
1. Onoclea sensibilis	75	✓	78.1%	FACW	✓ Dominance Test is > 50%				
2. Osmunda cinnamomea	8		8.3%	FACW	l				
3. Equisetum arvense	8		8.3%	FAC	✓ Prevalence Index is ≤3.0 ¹				
4.Carex lurida	5		5.2%	OBL	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
5	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)				
6.	0		0.0%						
7	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must				
8	0		0.0%		be present, unless disturbed or problematic.				
9	0		0.0%		Definitions of Vegetation Strata:				
10	0		0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter				
11	0		0.0%		at breast height (DBH), regardless of height.				
12	0		0.0%		Cooling/should Mandy plants land than 3 in DDI and				
Woody Vine Stratum (Plot size:)	96	= To	otal Cove	r	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall				
1	0	П	0.0%		Herb - All herbaceous (non-woody) plants, regardless o				
			0.0%		size, and woody plants less than 3.28 ft tall.				
2		\Box	0.0%						
3			0.0%		Woody vine - All woody vines greater than 3.28 ft in height.				
4			otal Cove	-	Thoight.				
		- 10	otal cove	1					
					Hydrophytic Vegetation Present? Yes No				

^{*}Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil Sampling Point: AN23 Wetland

	ption: (Desc	ribe to t	he depth	needed to document the indicator or confirm the	absence of indicators.)				
Depth (inches)	Color (m	//atrix	- % -	Redox Features Color (moist) % Type 1 Loc²	Texture	Remarks			
				Coloi (Moist) 26 Type Loc-		Remarks			
0-7	10YR	3/2	100%		Loam				
7-15	2.5Y	4/1	100%		Sandy Loam				
					-				
					-				
_					-				
¹ Type: C=Cond	entration. D=	Depletion	n. RM=Red	uced Matrix, CS=Covered or Coated Sand Grains ² Loca	ation: PL=Pore Lining. M=N	Matrix			
Hydric Soil I	ndicators:				Indicators for Probl	lematic Hydric Soils : ³			
Histosol (A	A1)			Polyvalue Below Surface (S8) (LRR R,	2 cm Muck (A10)	(LRR K, L, MLRA 149B)			
Histic Epip				MLRA 149B)		ox (A16) (LRR K, L, R)			
Black Histi				☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)		or Peat (S3) (LRR K, L, R)			
	Sulfide (A4)			Loamy Mucky Mineral (F1) LRR K, L)	Dark Surface (S7)				
_	ayers (A5)			Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	Polyvalue Below Surface (S8) (LRR K, L)				
_	Below Dark Su		1)	Redox Dark Surface (F6)	Thin Dark Surface	e (S9) (LRR K, L)			
_	Surface (A12			Depleted Dark Surface (F7)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)				
	ck Mineral (S1)			Redox Depressions (F8)	Piedmont Floodplain Soils (F19) (MLRA 149B)				
	yed Matrix (S4	1)		☐ Redux Deplessions (10)	Mesic Spodic (TA	6) (MLRA 144A, 145, 149B)			
Sandy Red					Red Parent Mater	ial (TF2)			
Stripped N					☐ Very Shallow Dark Surface (TF12)				
☐ Dark Surfa	ice (S7) (LRR	R, MLRA	149B)		Other (Explain in	Remarks)			
³ Indicators of	hydrophytic v	egetation	and wetla	nd hydrology must be present, unless disturbed or probl	ematic.				
Restrictive La	ver (if obser	rved):							
Type: sto	•								
Depth (inch					Hydric Soil Present?	Yes ● No ○			
	100/1								
Remarks:									