

**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
10 Maxwell Drive
Clifton Park, NY 12065**

January 2012





THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
LAND RESOURCES MANAGEMENT
WETLANDS BUREAU

29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Phone: (603) 271-2147 Fax: (603) 271-6588

Website: <http://des.nh.gov/organization/divisions/water/wetlands/index.htm>

Permit Application Status: <http://des.nh.gov/onestop/index.htm>



WETLANDS PERMIT APPLICATION

| | | | |
|-------------------------------|-------------------------------|-------------------------------|--------------|
| Administrative Use Only | Administrative Use Only | Administrative Use Only | File Number: |
| | | | Check No. |
| | | | Amount: |
| | | | Initials: |

1. REVIEW TIME AND IMPACT TYPE: Use Attachment "A" to determine review time and impact type.

☐ Expedited Review, Minimum Impact ☐ Standard Review, Minimum Impact ☒ Standard Review, Minor or Major Impact

2. PROJECT LOCATION:

ADDRESS: 354 Keene Rd.

TOWN/CITY: Antrim

TAX MAP: 212; 235; 236; 239

BLOCK:

212-27, 30, & 34;
235-14; 236-1 & 2;
LOT: 239-1

UNIT:

LOCATION COORDINATES: N: 203,000 ft E: 890,000 ft

☐ Latitude/Longitude ☐ UTM ☒ State Plane

3. PROPERTY OWNER INFORMATION:

NAME: See attached Exhibit 10.

EMAIL or FAX:

PHONE:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

4. APPLICANT INFORMATION:

NAME: Antrim Wind Energy, LLC

EMAIL or FAX: generate@eolian-energy.com

PHONE: 603-570-4842

MAILING ADDRESS: 155 Fleet St.

TOWN/CITY: Portsmouth

STATE: NH

ZIP CODE: 03801-4050

5. AGENT INFORMATION:

NAME: Joshua S. Brown

COMPANY NAME: TRC

EMAIL or FAX: jsbrown@trcsolutions.com

PHONE: 518-688-3146

MAILING ADDRESS: 10 Maxwell Dr.

TOWN/CITY: Clifton Park

STATE: NY

ZIP CODE: 12065

6. CHECK BOX TO INDICATE APPLICABLE PROJECT TYPES:

- ☐ Excluding culverts and bridges, all work in the bed or bank of a lake/pond of which the property owner(s) listed on page 1 do NOT own the entire bed and banks of the lake/pond.
- ☐ Dock construction, maintenance, repair or replacement on a RIVER.

- ☒ Work in a wetland, stream, river (excluding docks on rivers), prime wetland, prime wetland buffer, tidal water, salt marsh, sand dune, tidal buffer zone or in a pond of which the entire bed and banks are owned by the property owner(s) listed on page 1.
- ☒ All culvert and bridge construction, maintenance, repair or replacement.

7. PROJECT DESCRIPTION:

The proposed Antrim Windpark Project is a wind energy generation facility to be located in Antrim, New Hampshire. The project will include construction of ten (10) wind turbine generators, a substation, and associated access roads, crane pads, and stormwater management facilities. The proposed site is generally linear, running approximately north to south along the ridge top of Tuttle Hill and Willard Mountain and spanning several individually owned parcels. The site will be accessed from State Route 9 (Keene Road). Approximately 4.0 miles of gravel road will be constructed.

Within the project area, approximately 57.9 acres will be disturbed during construction. Following construction, approximately 46.4 acres will be restored and revegetated including roadway shoulders and side slopes, and much of the construction pad area at the tower locations. Approximately 11.5 acres will remain as permanently developed area including the access road, substation yards, crane pads, and tower foundations.

8. INDICATE AREA OF PROPOSED IMPACTS FOR EACH RESOURCE:

| Resource: | Permanent Sq. Ft. | Permanent Lin. Ft. | Temporary Sq. Ft. | Temporary Lin. Ft. | After-the-fact Sq. Ft. | After-the-fact Lin. Ft. |
|----------------------|----------------------|-----------------------|----------------------|-----------------------|---------------------------|----------------------------|
| Forested wetland | 5,672 | - | | - | | - |
| Scrub-shrub wetland | 2,676 | - | | - | | - |
| Emergent wetland | | - | | - | | - |
| Wet meadow | | - | | - | | - |
| Bog | | - | | - | | - |
| Prime wetland | | - | | - | | - |
| Prime wetland buffer | | - | | - | | - |
| Docking structure | | - | | - | | - |
| Tidal Buffer Zone | | - | | - | | - |
| Tidal water | | - | | - | | - |
| Salt Marsh | | - | | - | | - |
| Sand dune | | - | | - | | - |
| Intermittent Stream | 156 | 156 | | | | |
| Perennial Stream | 296 | 74 | | | | |
| River | | | | | | |
| Lake | | | | | | |
| Pond | | | | | | |
| Other | | | | | | |
| Total | 8,800 | 230 | | | | |

| 9 - 13. IF APPLICABLE, PROVIDE: | | | |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------|--------------------------------|
| 9. Cubic yards of proposed sand for beach replenishment: NA | | | |
| 10. Cubic yards of proposed dredge material for surface water dredge: NA | | | |
| 11. Contributing watershed size(s) of impacted stream(s) and river(s) (acres or square miles): AN-29: 12.6 ac. AN-17: 106.4 ac. | | | |
| 12. U. S. Geological Survey Topographic Map Waterbody name: North Branch River | | | |
| 13. ONLY Required for docking structures | (a) | (b) | (a) + (b) / 2 = |
| | Straight line distance pin to pin (lin. ft.) | Actual natural navigable shoreline pin to pin (lin. ft.) | Shoreline Frontage (lin. ft.): |
| | | | |

| 14. APPLICATION FEE: | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|----------------|
| <input type="checkbox"/> Minimum Impact, Expedited Review Application: Flat fee of \$ 200 - OR - <input checked="" type="checkbox"/> Minimum, Minor or Major Impact, Standard Review Application: Complete calculation below | | | |
| Total temporary and permanent impacts: | <u>8,800</u> sq. ft. | X \$0.20 = | <u>\$1,760</u> |
| Temporary Docking Structure: | <u>0</u> sq. ft. | X \$1.00 = | <u>0</u> |
| Permanent Docking Structure: | <u>0</u> sq. ft. | X \$2.00 = | <u>0</u> |
| Projects proposing shoreline structures add \$200 or NA = | | | <u>NA</u> |
| Total = | | | <u>\$1,760</u> |
| The Application Fee is above calculated Total or \$200, whichever is greater = | | | <u>\$1,760</u> |

| 15. INDICATE RELATED FILE / APPROVAL NO. AND STATUS: |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Existing Wetlands Bureau file no. this application is replacing: |
| Wetlands Bureau enforcement (subject and abutting properties): |
| Wetlands Bureau emergency authorization (subject property): |
| Wetlands Bureau denials (subject and abutting properties): |
| Wetlands Bureau withdrawals (subject and abutting properties): |
| Wetlands Bureau approvals (subject and abutting properties): |
| Shoreland Program waiver or permit: |
| Alteration of Terrain Bureau: pending; submitted 1/31/12 |
| Watershed Management Program: |
| Subsurface Systems Bureau: |
| Other NHDES Programs and Bureaus: |
| City/Town: |
| State Agencies: Natural Heritage Bureau; file #NHB10-0644 |
| Federal Agencies: |
| Link to all NHDES Programs, Bureaus and Units: http://des.nh.gov/programs/index.htm |

16. THE SUBMITTED APPLICATION WILL BE RETURNED TO YOU IF THE FOLLOWING INFORMATION IS NOT PROVIDED:

- ☒ A. Attach application fee, check or money order payable to the NH DES Wetlands Bureau (RSA 482-A:3,I & Env-Wt 505.01(c)) **(EX. 1)**
- ☒ B. Applicant and Town Clerk signatures, numbers 19 and 23 on pages 5 and 6 of this form (Env-Wt 501.01(d)&(e) & 505.01(m)&(o))
- ☒ C. Narrative description of the proposed project, number 7 on page 2 of this form (Env-Wt 501.02(a) & 505.01(l))
- ☒ D. Documentation from Department of Resources and Economic Development's Natural Heritage Bureau (NHB) indicating that NHB has reviewed your project. Documentation can be obtained online at: <https://www2.des.state.nh.us/nhbdatacheck/> or by phone (603) 271-2215 x 323. Please attach the REQUIRED letter/memo and map provided by NHB. **(EX. 2)**
- ☒ E. Attach a U. S. Geological Survey topographic map upon which the property lines and project limits have been outlined. The map must be at an unaltered scale of 1:24,000 or 1" = 2,000 feet (1:25,000 metric map). (Env-Wt 501.02(a)(4) & 505.01(g)) **(EX. 3)**
- ☒ F. Attach a legible copy or tracing of the tax map from the municipal office (Env-Wt 501.02(a)(1)& 505.01(e)) **(EX. 4)**
- ☒ G. Attach legible and labeled color photographs clearly depicting the jurisdictional areas to be impacted, the resource outside of impact area, any shoreline structures and culvert inlet/outlets (Env-Wt 501.02(a)(3) & 505.01(i)) **(EX. 5 & EX. 6)**
- ☒ H. Attach overview, cross-section and profile plans as applicable (Env-Wt 501.02(a)(2) & 505.01(h)) **(See App. 7A of SEC Application)**

17A. INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR ALL PROJECTS:

- ☒ A. Is the project within a ¼ mile of a designated river? <http://des.nh.gov/organization/divisions/water/wmb/rivers/designriv.htm>
☐ Y ☒ N. **If yes:** 1. Indicate river: _____
 2. As required by RSA 482-A:3,I(d)(2), I have notified the Local River Advisory Committee (<http://des.nh.gov/organization/divisions/water/wmb/rivers/lac/index.htm>) by sending a copy of the complete application and supporting materials via certified mail on: **Day:** ____ **Month:** ____ **Year:** ____
 3. Attach a copy of the certified mail receipt with your application submittal (RSA 482-A:3,I(d)(2))
- ☒ B. Attach a completed U.S. Army Corps of Engineers New Hampshire Programmatic General Permit (PGP) Appendix B – Required Information and Corps Secondary Impact Checklist (Attachment B). **(EX. 7)**
- ☒ C. Does the project require compensatory mitigation pursuant to Env-Wt 302.03? ☐ Y ☒ N
If yes, attach materials outlined in AND a completed Mitigation Agreement Form (Env-Wt 501.02(a)(6) & 501.06)
 Link: http://des.nh.gov/organization/commissioner/pip/forms/wetlands/documents/mitigation_form.doc
- ☒ D. Attach a copy or tracing of the town tax map showing the property of the applicant, the location of the proposed project on the property, and the location of properties of abutters with each lot labeled with the abutter's name(s) and mailing address(es); or a list of abutters' names and mailing addresses to cross-reference with the tax map (Env-Wt 501.02(a)(1)& 505.01(f)). Abutter Notification Exceptions see Env-Wt 501.01(c) **(EX. 4)**
- ☒ E. Attach a construction sequence (Env-Wt 501.02(a)(5) & 505.01) **(EX. 8)**
- ☒ F. Is/are (a) waiver(s) to wetland rules being requested? ☐ Y ☒ N **If yes,** attach the waiver request(s) as outlined in Env-Wt 204
- ☒ G. All stream/river crossing projects, attach a response to Env-Wt 904.01, General Design Considerations (except single family residential access for Tier 1 and Tier 2 crossings pursuant to Env-Wt 303.04(z) & 901.03(e)) **(EX. 9)**
- ☒ H. If the applicant is not the property owner, attach a written letter of permission from the property owner granting the applicant permission to act on their behalf **(EX. 10)**
- ☒ I. Will impacts occur within 20 feet of an abutting property line or imaginary extension thereof over surface water? ☐ Y ☒ N
If yes, attach the signed permission letter(s) from the affected abutters (Env-Wt 304.04). This letter must be notarized if your project is a boat docking facility (RSA 482-A:3-XIII(c))

17B. INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR MINIMUM IMPACT PROJECTS:

- ☐ J. Refer to Attachment A: Determination for Project Impact Classification & Review Time, Section 2: Minimum Impact Project Requirements, and indicate the letter for the Minimum Impact rule that describes your project: **Env-Wt 303.04** ____
- ☐ K. Attach required pages from Attachment A: Determination for Project Impact Classification & Review Time, as instructed on the attachment.
- ☐ L. Attach a statement demonstrating need for the proposed project (Pursuant to Env-Wt 302.03)
- ☐ M. Attach a statement demonstrating that the proposal is the alternative with the least adverse impact to areas and environments under the department's jurisdiction in accordance with Env-Wt 302.03. (Env-Wt 505.01(d)&(y)).

17C. INFORMATION REQUIRED FOR COMPLETION OF TECHNICAL REVIEW FOR MINOR AND MAJOR IMPACT PROJECTS:

- ☒ N. Attach a response to questions outlined in Env-Wt 302.04(a) **(EX. 11)**
- ☒ O. Attach a vernal pool survey and report (Env-Wt 302.04(a)) **(EX. 6)**
- ☒ P. If a wetland delineation is required, provide a NH Certified Wetland Scientist Stamp on attached plans (Env-Wt 301.01)

| 18. SEE LISTED WETLAND RULE(S) FOR APPLICABLE PROJECT TYPE(S) PLAN REQUIREMENTS: | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Minimum | Env-Wt 505.01 |
| <input checked="" type="checkbox"/> Minor and Major | Env-Wt 501.02 |
| <input type="checkbox"/> Subdivision | Env-Wt 304.09(c) |
| <input type="checkbox"/> Vegetative & riprap bank stabilization (river, stream, lake, pond) | Env-Wt 404.03 & 404.04 |
| <input type="checkbox"/> Retaining Walls | Env-Wt 404.05 |
| <input type="checkbox"/> Shoreline | Env-Wt 501.02(c) |
| <input type="checkbox"/> Tidal | Env-Wt 501.02(b) |
| <input type="checkbox"/> Protected Shoreland (SWQP) | Env-Wt 501.02(d) |
| <input checked="" type="checkbox"/> New Tier 1 Stream Crossing (Exempt: Env-Wt 303.04(z)) | Env-Wt 903.03(a) & 904.01 |
| <input type="checkbox"/> Tier 1 stream crossing or replacement | Env-Wt 903.03(a) & 904.01 |
| <input type="checkbox"/> New Tier 2 stream crossing (Exempt: Env-Wt 303.04(z)) | Env-Wt 903.03(a), 904.01, 904.03 (e), 904.03(f) |
| <input type="checkbox"/> Tier 2 stream crossing repair or replacement | Env-Wt 903.03(a), 904.01, 904.03 (e), 904.03(f) |
| <input type="checkbox"/> All Tier 3 Stream Crossings | Env-Wt 903.03 (a) & (b) , 904.01, 904.04(d), 904.04(g), 904.05 |
| Wetland Rules Link: http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wt100-900.pdf | |

| 19. APPLICANT AND AGENT SIGNATURES REQUIRED FOR ALL APPLICATIONS: | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|
| By signing the application, I am certifying that: | | |
| <ol style="list-style-type: none"> 1. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900. 2. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type. 3. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative. 4. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.44. 5. I have submitted a copy of the application materials to the NH State Historic Preservation Officer. 6. I authorize the municipal conservation commission to inspect the site of the proposed project. 7. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate. 8. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action. 9. I am aware that the work I am proposing may require additional state, local or federal permits. 10. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail. | | |
| Signature of Applicant | John B. Kennedy | 1/26/12 |
| Signature of Authorized Agent (if applicable) | Print name legibly | Date |
| 20. ELECTRONIC COMMUNICATION: | | |
| By initialing here, I the applicant or authorized agent in accordance with RSA 482-A:3, XIV (b), hereby authorize DES to communicate all matters relative to this application electronically with the individual's email addresses provided on pg. 1 of the application: | | JBK |

21. CONSERVATION COMMISSION SIGNATURE REQUIRED FOR EXPEDITED APPLICATIONS ONLY:

Expedited Applications ONLY require that the Conservation Commission signature is obtained prior to submitting the final application to the Town/City Clerk for signature and mailing to the NHDES Wetlands Bureau. *The Conservation Commission is not required to sign. If the Conservation Commission does not sign this statement for any reason, then the application is not eligible for expedited review and shall be reviewed in the standard review time.*

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.

Authorized Commission Signature

Print name legibly

Date

22. APPLICATION SUBMITTAL:**APPLICANT:**

1. If sought, obtain the Conservation Commissions signature as outlined above on this page, no. 21;
2. Submit the original application form and materials, four copies, application fee check and any required municipal fees (authorized by RSA 482-A:3,I) to the town/city clerk.

TOWN/CITY CLERK:

Per RSA 482-A:3,I(d):

1. Collect from the applicant the postal receipts demonstrating that all abutters and the Local Advisory Committee were sent proper notice;
2. Immediately sign the original application and four copies in the signature space provided on this pg. no. 23 below;
3. Retain one copy of the application form and all attachments that will remain with the town/city clerk and will be made reasonably accessible to the public;
4. Immediately distribute a copy of the application with attachments to the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board in accordance with RSA 482-A:3, I; and
5. IMMEDIATELY send the original application materials and filing fee, by CERTIFIED MAIL to the NHDES Wetlands Bureau at the address indicated on the front of this application.

23. TOWN/CITY CLERK SIGNATURE REQUIRED FOR ALL APPLICATIONS:

I hereby certify that the applicant has filed five application forms, five detailed plans, and five USGS location maps with the town/city indicated below. As required by Chapter 482-A:3 (amended 1991), and I have received and retained certified postal receipts (or copies) for all abutters identified by the applicant.

Town/City

Signature or Town/City Clerk

Print name legibly

Date

SECTION 1 - QUESTIONS:

Please check yes or no in response to the following questions. Does the project?

| | | |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| All: | | |
| 1. | Impact areas in or within 100 feet of a designated prime wetland (Env-Wt 303.02(f))? Link: http://des.nh.gov/organization/divisions/water/wetlands/prime_wetlands.htm | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. | The Natural Heritage Bureau (NHB) report identified a positive result for an exemplary natural community tracked as rare by NHB AND the required additional communication with NHB has confirmed that the project will impact the identified community (Env-Wt 303.02 (k))? Link: https://www2.des.state.nh.us/nhb_datacheck/ | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 3. | The NHB report identified a positive result for a species tracked as rare by NHB AND the required additional communication with the NH Fish and Game Department or the US Fish and Wildlife Service has confirmed that the project will impact identified species (Env-Wt 303.02 (k))? Link: https://www2.des.state.nh.us/nhb_datacheck/ | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Freshwater Wetlands: | | |
| 4. | Involve temporary and/or permanent impacts of more than 3,000 square feet in a swamp or wet meadow (Env-Wt 303.04(f)), except for work that complies with rules: a. Env-Wt 303.04(p), construction of a pond; b. Env-Wt 303.04(j), projects within a public road right-of-way; c. Env-Wt 303.04(k), maintenance dredging; d. Env-Wt 303.04(ae), installation of residential utility lines; or e. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? * See pgs. 4 – 9 for referenced Minimum Impact Rules. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 5. | Involve ANY temporary and/or permanent impacts to wetland types other than swamps or wet meadows, except for work that complies with: a. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? * See pgs. 4 – 9 for referenced Minimum Impact Rules. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Lakes and Ponds: | | |
| 6. | Involve removal of rock, gravel, sand, mud or other material from public waters (Env-Wt 303.03(g))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 7. | Disturb 50 or more linear feet, as measured along the shoreline of a lake or pond or its bank (Env-Wt 303.03(k))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Shoreline Structures: | | |
| 8. | Involve construction or modification of a permanent dock that is not in-kind repair or replacement? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 9. | Involve construction or modification of a docking system that provides more than 2 boat slips, including those previously existing and proposed? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 10. | Involve construction or modification of any dock adjacent or attached to a breakwater? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 11. | Involve installation of new tie-off piles, ice clusters, or dolphins which do, by their presence, add boat slips to an existing docking system (Env-Wt 303.03(m))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 12. | Involve construction of a new breakwater in public waters (Env-Wt 303.02(j))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

| | | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Tidal: | | |
| 13. | Involve ANY work within 50 feet of a salt marsh (Env-Wt 303.03(b))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 14. | <p>Involve:</p> <ol style="list-style-type: none"> 1. Work in sand dunes; 2. Work in tidal wetlands (Env-Wt 303.02(a)); or 3. Work within 100 feet of the highest observable tide line that will alter any bank, flat, wetlands, surface water, or undeveloped uplands (Env-Wt 303.02(b)). <p>Except for repair to existing structure that complies with:</p> <ol style="list-style-type: none"> a. Env-Wt 303.04(v), in-kind maintenance, repair or replacement; or b. Env-Wt 303.04(t), state or federal agency supervised and supported restoration? <p>* See pgs. 4 – 9 for referenced Minimum Impact Rules.</p> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Non-Crossing Stream Impacts: | | |
| 15. | Impact greater than 50 linear feet of intermittent stream or perennial stream bed or bank NOT for installation of a crossing structure, such as a culvert or bridge (Env-Wt 303.03(l))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Stream Crossings: | | |
| 16. | <p>Propose a new or replacement crossing on a stream:</p> <ol style="list-style-type: none"> a. Within a Designated River Corridor http://des.nh.gov/organization/divisions/water/wmb/rivers/designriv.htm; b. On a watercourse that is listed on the surface water assessment 305(b) report in effect at the time of application as not attaining surface water quality standards for aquatic life based on one or more of the following: Benthic macroinvertebrate index of biological integrity; Fish assemblage index of biological integrity; Habitat assessment; or stream channel stability http://des.nh.gov/organization/divisions/water/wmb/swqa/2010/documents/all_impaired_waters_20100610.pdf ; or c. Within a 100-year flood plain or fluvial erosion hazard zone http://www.fema.gov/hazard/map/firm.shtm? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 17. | Propose a new or replacement Tier 3 stream crossing (Env-Wt 303.02(p))? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 18. | <p>Propose a new Tier 2 stream crossing that is NOT a stream crossing for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z)?</p> <p>* See pgs. 4 – 9 for referenced Minimum Impact Rules.</p> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 19. | <p>Propose a Tier 1 or Tier 2 stream crossing repair or replacement that:</p> <ol style="list-style-type: none"> a. Does not meet the General Criteria specified in Env-Wt 904.01 http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wt100-900.pdf; b. Diminishes the hydraulic capacity of the crossing; c. Diminishes the accommodation of aquatic species passage; or d. Is not for Minimum impact stream crossings for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z) or (ag)? <p>* See pgs. 4 – 9 for referenced Minimum Impact Rules.</p> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 20. | <p>Propose an Alternative Design per Env-Wt 904.04 for a new Tier 1 or Tier 2 stream crossing that is NOT a stream crossing for access to a property for a single-family residential property or building lot, for noncommercial recreational purposes including conservation projects, or for normal agricultural operations, conducted in accordance with Env-Wt 303.04(z) or (ag)?</p> <p>* See pgs. 4 – 9 for referenced Minimum Impact Rules.</p> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

EXHIBIT 1
COPY OF APPLICATION CHECK

Antrim Wind Energy LLC

155 Fleet Street
Portsmouth, NH 03801
(603) 570-4842

TD BANK
America's Most Convenient Bank

54-7-114

1/27/2012

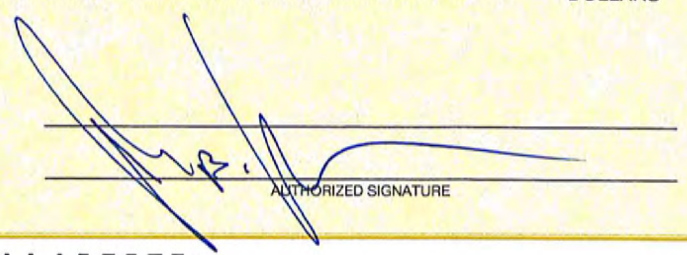
PAY
TO THE
ORDER OF

Treasurer State of New Hampshire

\$ **13,250.00

Thirteen Thousand Two Hundred Fifty and 00/100***** DOLLARS

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



AUTHORIZED SIGNATURE

MEMO

AOT Permit Fee - Antrim Wind

⑈001146⑈ ⑆011400071⑆ 9244137398⑈

Security features. Details on back.

Antrim Wind Energy LLC

Treasurer State of New Hampshire

AOT Permit Fee

1/27/2012

13,250.00

TD Bank Business Ch AOT Permit Fee - Antrim Wind

13,250.00

Antrim Wind Energy LLC

Treasurer State of New Hampshire

AOT Permit Fee

1/27/2012

13,250.00

TD Bank Business Ch AOT Permit Fee - Antrim Wind

13,250.00

EXHIBIT 2

NEW HAMPSHIRE NATURAL HERITAGE BUREAU LETTER OF 8/3/11



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS

PO Box 1856 -- 172 PEMBROKE ROAD, CONCORD, NH 03302-1856
(603) 271-2214

To: Josh Brown, TRC Solutions

From: Melissa Coppola, NHB-Environmental Information Specialist

Date: August 3, 2011

Subject: Antrim Rare Plant Surveys

Thanks for sending the natural community mapping for the proposed Antrim Wind Site. We recommend that you reconsider the classification of the area currently mapped as ***high elevation spruce fir forest***. This community is known to occur from 2500 to 4000 feet elevation, well above the elevation of this site.

Based on the information provided we suggest targeting the following rare plant species in the communities listed below.

- ***rich red oak rocky woods***
 - sickle-pod (*Boechera canadensis*)
 - smooth rock cress (*Boechera laevigata*)
 - Carolina cranesbill (*Geranium carolinianum*)
 - climbing fumitory (*Adlumia fungosa*)
- ***hemlock - beech - oak - pine forest***
 - small whorled pogonia (*Isotria medeoloides*)
- ***red oak - pine rocky ridge***
 - Douglas' knotweed (*Polygonum douglasii*)
 - Smooth sandwort (*Minuartia glabra*)
- ***red spruce swamp***
 - green adder's mouth (*Malaxis unifolia*)

Should you have any further questions, contact me at 603-271-2215 ext. 323 or at Melissa.Coppola@dred.state.nh.us.

Memo



NH NATURAL HERITAGE BUREAU

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

Project type: Roads, Driveways, Bridges: Road construction, etc.

Town: Antrim

Location: Tax Maps: 212-030, 212-027, 212-034, 211-004, 235-014

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

Inland Atlantic white cedar swamp

State¹

--

Federal

--

Notes

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

Wood Turtle (*Glyptemys insculpta*)

State¹

SC

Federal

--

Notes

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.

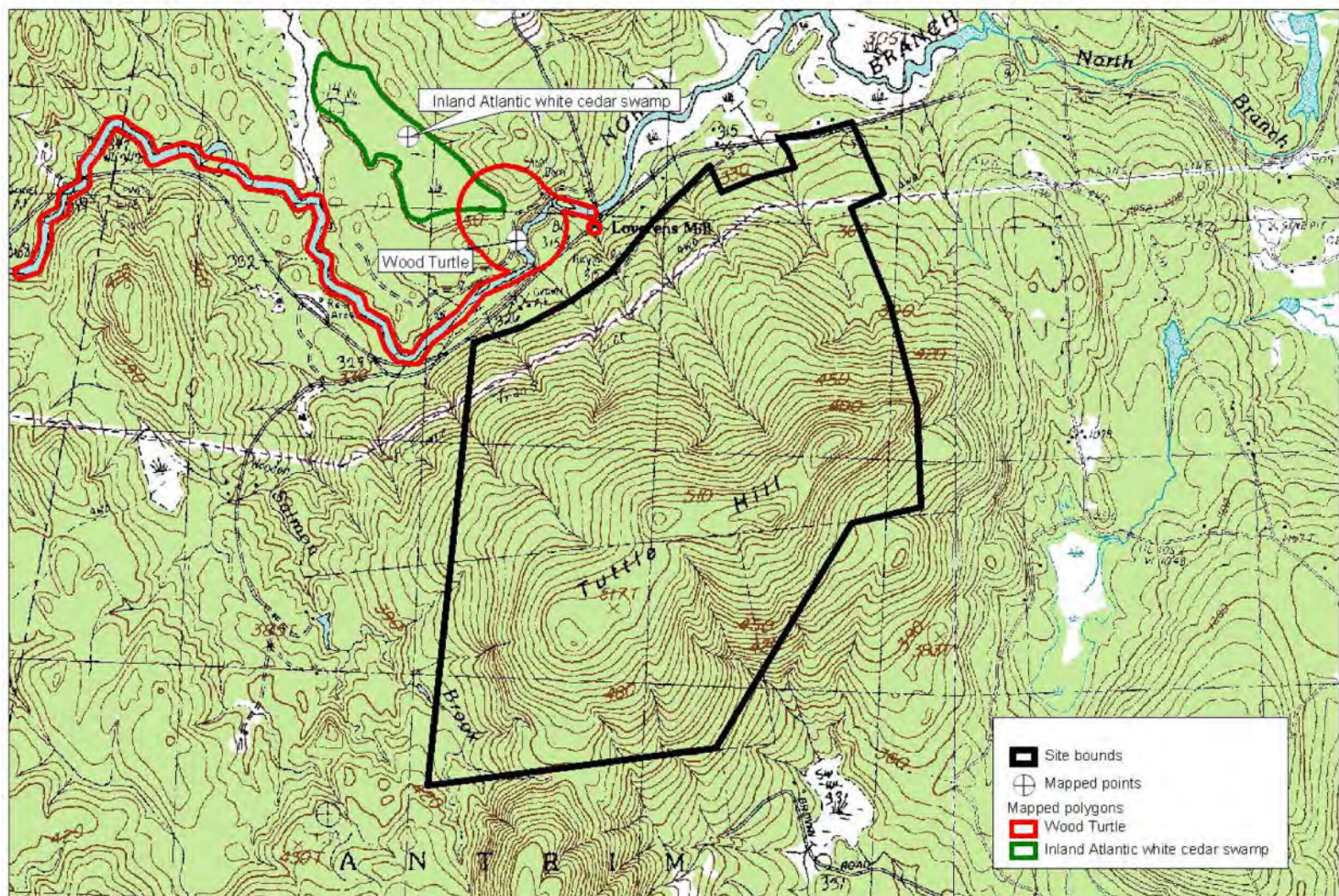
NHB10-0644



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.



*Historical record



Valid for one year from this date: 22 Mar 2010

New Hampshire Natural Heritage Bureau - Community Record

Inland Atlantic white cedar swamp

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
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* (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.

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. Atlantic White Cedar Wetlands of New Hampshire. Environmental Protection Agency, Boston, MA.

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (*Glyptemys insculpta*)**Legal Status**

Federal: Not listed
State: SC

Conservation Status

Global: Apparently secure but with cause for concern
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
Town(s): Antrim
Size: 84.4 acres

USGS quad(s): Stoddard (4307211)
Lat, Long:
Elevation:

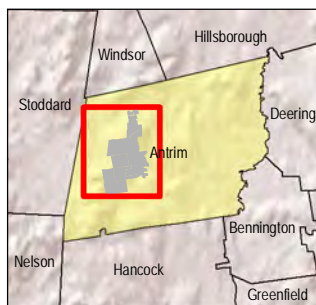
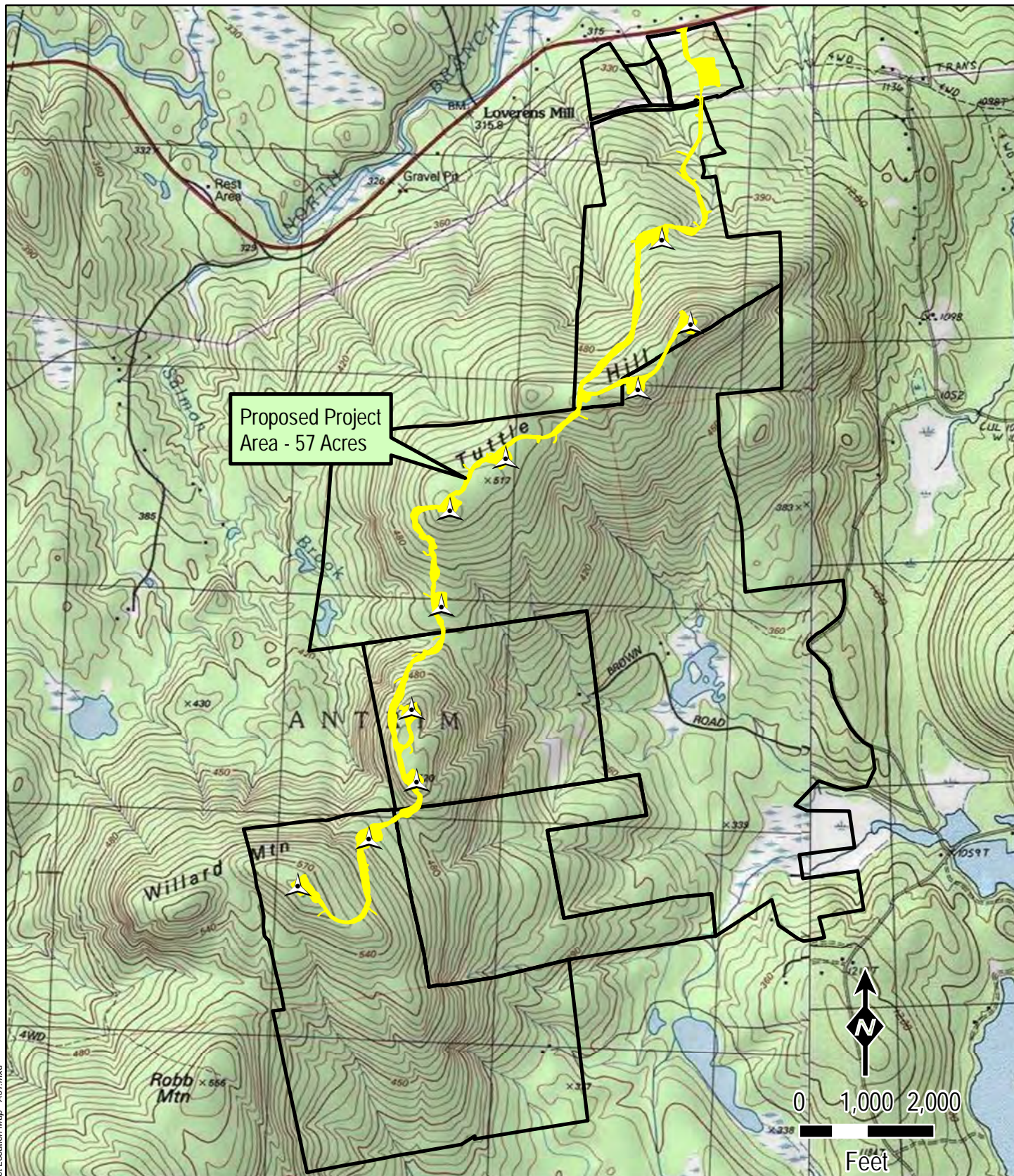
Precision: Within (but not necessarily restricted to) the area indicated on the map.

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

EXHIBIT 3
AREA MAP



Legend


-  Proposed WTG
-  Proposed Project Area - 57 Acres
-  Project Parcels



ANTRIM WIND ENERGY PROJECT

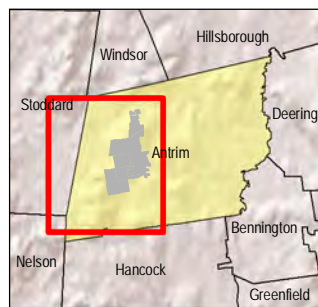
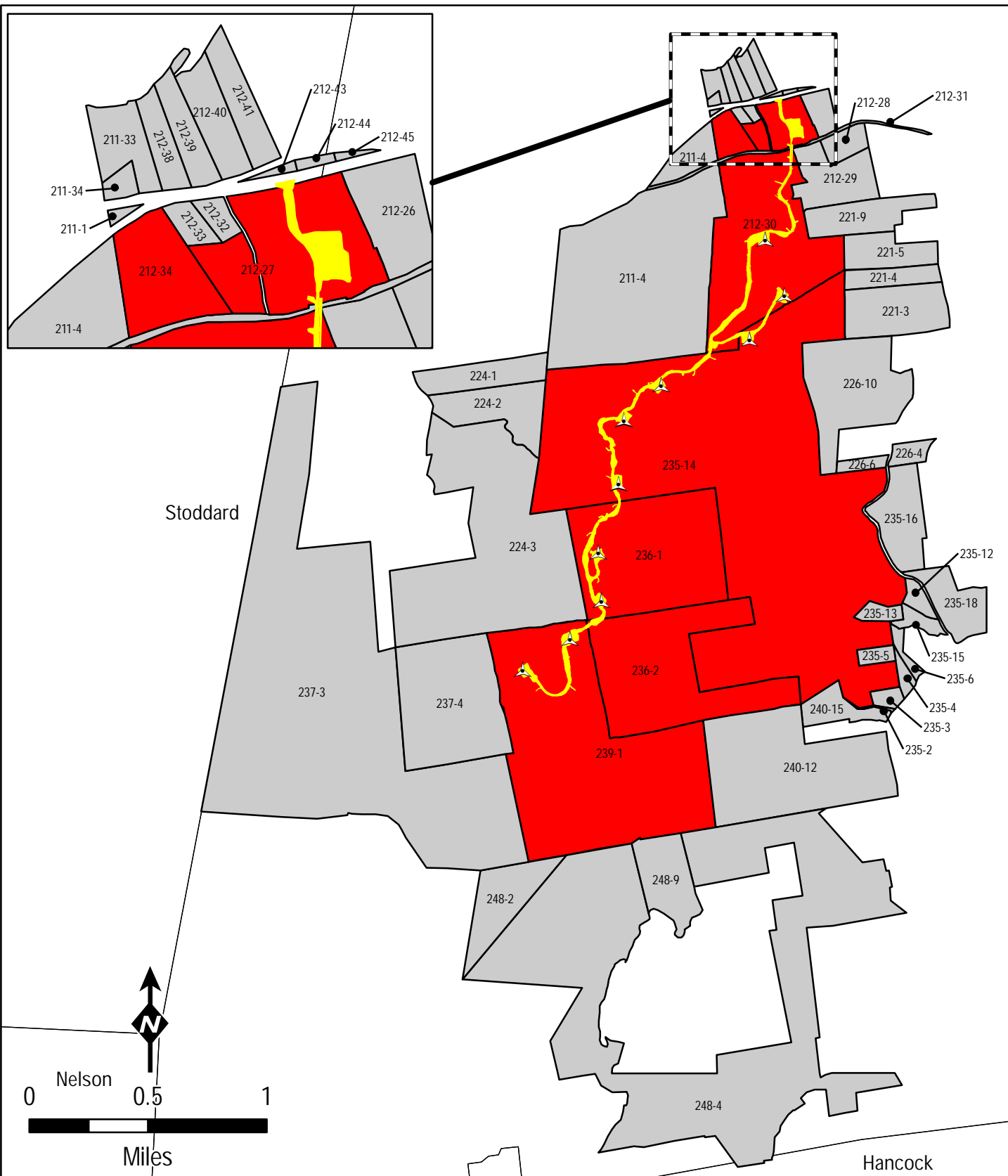
354 KEENE ROAD, ANTRIM, NH

Project Location Map





Produced by: 

1/25/2012

EXHIBIT 4
TAX MAP
AND ABUTTER NOTIFICATION




Legend

-  Proposed WTG
-  Proposed Project Area - 57 Acres
-  Project Parcels
-  Abutter



**ANTRIM WIND
ENERGY PROJECT**
354 KEENE ROAD, ANTRIM, NH
Project Abutter Map

Produced by: 

1/25/2012

Antrim Wind Park Project Parcels and Project Abutters

| Map | Lot | Owner | Type | Property Address | Owner Address | Owner Address |
|-----|-----|---------------------------------------------------------------------------|-----------------|---------------------------|-----------------------------|-------------------------|
| 212 | 30 | MICHAEL JAMES HUTCHINS OTT | Project Parcels | HIGH RANGE ROAD | PO BOX 160 | ANTRIM, NH 03440 |
| 212 | 27 | MICHAEL JAMES HUTCHINS OTT | Project Parcels | 354 KEENE ROAD | PO BOX 160 | ANTRIM, NH 03440 |
| 212 | 34 | MICHAEL JAMES HUTCHINS OTT | Project Parcels | RUSSELL ROAD | PO BOX 160 | ANTRIM, NH 03440 |
| 235 | 14 | ANTRIM LIMITED PARTNERSHIP | Project Parcels | CRAIG ROAD | 224 CRAIG RD | ANTRIM, NH 03440 |
| 236 | 1 | CONTRAN, STEVEN R | Project Parcels | BRIMSTONE CORNER ROAD | 26 MCINTOSH LANE | BEDFORD, NH 03110 |
| 236 | 2 | PAUL & CAROL WHITTEMORE | Project Parcels | OFF BRIMSTONE CORNER ROAD | PO BOX 528 | ANTRIM, NH 03440 |
| 239 | 1 | WHITTEMORE TRUST | Project Parcels | 103 CAMP ROAD - PVT RD 38 | 16501 NORTH ELMIRAGE RD 735 | SURPRISE, AZ 85374 |
| 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 | HUTCHINSON TED & DIANA | Abutter | 367 KEENE ROAD | 363 KEENE ROAD | ANTRIM, NH 03440 |
| 211 | 1 | JACKSON BRADLEY | Abutter | KEENE ROAD | PO BOX 632 | JAFFREY, NH 03452 |
| 212 | 31 | OWNER UNKNOWN | Abutter | HIGH RANGE ROAD | | |
| 212 | 33 | YORK RIVER REALTY TRUST | Abutter | KEENE ROAD | 6 MANHATTAN DR | AMHERST, NH 03031 |
| 212 | 32 | LISA J. MCALISTER/ROWLAND DOUGLAS & LISA | Abutter | 362 KEENE ROAD | 362 KEENE ROAD | ANTRIM, NH 03440 |
| 212 | 39 | MOOTE WAYNE A | Abutter | 355 KEENE ROAD | 355 KEENE ROAD | ANTRIM, NH 03440 |
| 212 | 40 | BARRY ROBERT W | Abutter | 351 KEENE RD | 351 KEENE RD | ANTRIM, NH 03440 |
| 212 | 43 | FROSCH REAL ESTATE INVESTMENTS, LLC | Abutter | 349 KEENE ROAD | 349 KEENE ROAD | ANTRIM, NH 03440 |
| 212 | 44 | VOYDATCH STEVEN & MAHALA | Abutter | 345 KEENE ROAD | 345 KEENE ROAD | DUNBARTON, NH 03045 |
| 212 | 45 | ELLINWOOD CHRISTIE & ALBERTIN | Abutter | KEENE ROAD | PO BOX 127 | ANTRIM, NH 03440 |
| 212 | 26 | COUTURIER MARCEL J KUSNAROWIS PAULA J | Abutter | 344 KEENE ROAD | 344 KEENE ROAD | ANTRIM, NH 03440 |
| 212 | 29 | MATA CRISTIAN ET UX | Abutter | OLD KEENE ROAD | 73 RHODODENDRON RD | STONY BROOK, NY 11790 |
| 212 | 28 | COLBY LARRY E | Abutter | HIGH RANGE ROAD | 1121 OLD HILLSBOROUGH RO | HENNIKER, NH 03242 |
| 212 | 41 | OLSEN FAMILY PTNRSHIP IV LTD | Abutter | KEENE ROAD | PO BOX 2050 | LECANTO, FL 34460-2050 |
| 212 | 38 | RAIMONDI DAVID C & ELIZABETH | Abutter | 359 KEENE ROAD | 359 KEENE ROAD | ANTRIM, NH 03440 |
| 221 | 9 | BERWICK BRUCE E & BARBARA I | Abutter | 72 REED CARR RD | 72 REED CARR RD | ANTRIM, NH 03440 |
| 221 | 5 | IVEY MARY ELLEN, TRUSTEE | Abutter | REED CARR ROAD | 36 COUNTRY CLUB LANE | MIDDLETON, MA 01949 |
| 221 | 4 | GARRETT C SPENCER & JOANN H | Abutter | 38 REED CARR RD | 38 REED CARR RD | ANTRIM, NH 03440 |
| 221 | 3 | IVEY III TRUSTEE SHELLEY/JEFFERSON F S | Abutter | 20 REED CARR ROAD | 36 COUNTRY CLUB LANE | MIDDLETON, MA 01949 |
| 224 | 2 | LONGGOOD JANICE | Abutter | 156 SALMON BROOK RD | 156 SALMON BROOK RD | ANTRIM, NH 03440 |
| 224 | 3 | MICHELI LYLE J & ANNE J | Abutter | SALMON BROOK ROAD | 319 LONGWOOD AVE | BOSTON, MA 02115 |
| 224 | 1 | SCHAEFER MARK J AND SCHACHER BRENDA K | Abutter | 128 SALMON BROOK RD | 128 SALMON BROOK RD | ANTRIM, NH 03440 |
| 226 | 10 | CRAIG CLARK A JR | Abutter | 224 CRAIG RD | 224 CRAIG RD | ANTRIM, NH 03440 |
| 226 | 6 | CRAIG MARY A | Abutter | CRAIG ROAD | 826 FOREST ROAD | GREENFIELD, NH 03047 |
| 226 | 4 | LEVESQUE WALTER T & JOY C | Abutter | CRAIG ROAD | 12 BACKMEADOW RD | NOBLEBORO, ME 04555 |
| 235 | 16 | CRAIG STEVEN M & JAMES P | Abutter | | | |
| 235 | 18 | TOA | Abutter | CRAIG ROAD | PO BOX 517 | ANTRIM, NH 03440 |
| 235 | 15 | TOA | Abutter | CRAIG ROAD | PO BOX 517 | ANTRIM, NH 03440 |
| 235 | 12 | STATE OF NEW HAMPSHIRE | Abutter | CRAIG ROAD | | CONCORD, NH 03301 |
| 235 | 13 | STATE OF NEW HAMPSHIRE | Abutter | CRAIG RD | | CONCORD, NH 03301 |
| 235 | 6 | TAYLOR GLENN P | Abutter | 19 BRIMSTONE CORNER RD | 19 BRIMSTONE CORNER RD | ANTRIM, NH 03440 |
| 235 | 4 | ROBINSON DANIEL C STEVEN E CHARLES E GARY M | Abutter | BRIMSTONE CORNER ROAD | 22802 NE 132ND CIRCLE | BRUSH PARAIIE, WA 98606 |
| 235 | 5 | ROBINSON DANIEL C STEVEN E CHARLES E GARY M | Abutter | BRIMSTONE CORNER ROAD | 22802 NE 132ND CIRCLE | BRUSH PARAIIE, WA 98606 |
| 235 | 3 | CAUGHEY GEORGE H MICHELLE B TRUSTEES/THE CAUGHEY FAMILY REAL ESTATE TRUST | Abutter | BRIMSTONE CORNER ROAD | 1 ENTRANCE WAY | WOODSIDE, CA 94062 |
| 235 | 2 | OWNER UNKNOWN | Abutter | PRIVATE ROAD 70 | | |
| 237 | 3 | MEADOWSEND TIMBERLANDS LIM PAR | Abutter | AREA WILLARD MOUNTAIN | PO BOX 966 | NEW LONDON, NH 03257 |
| 237 | 4 | NH FISH & GAME DEPARTMENT | Abutter | WEST SIDE OF ANTRIM | 11 HAZEN DRIVE | CONCORD, NH 03301 |

| Map | Lot | Owner | Type | Property Address | Owner Address | Owner Address |
|-----|-----|--------------------------------|---------|-----------------------|------------------------|-------------------|
| 240 | 15 | CUDDIHY RUSSELL J & MARY | Abutter | BRIMSTONE CORNER ROAD | 44 BRIMSTONE CORNER RD | ANTRIM, NH 03440 |
| 240 | 12 | GIRL SCOUTS OF SWIFT WATER CSL | Abutter | BRIMSTONE CORNER ROAD | PO BOX 10832 | BEDFORD, NH 03110 |
| 248 | 4 | AUDUBON SOCIETY OF NH | Abutter | WILLARD POND | 3 SILK FARM RD | CONCORD, NH 03301 |
| 248 | 9 | AUDUBON SOCIETY OF NH | Abutter | WILLARD POND | 3 SILK FARM RD | CONCORD, NH 03301 |
| 248 | 2 | AUDUBON SOCIETY OF NH | Abutter | WILLARD POND | 3 SILK FARM RD | CONCORD, NH 03301 |

ABUTTER NOTIFICATION
OF
WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

January 27, 2012

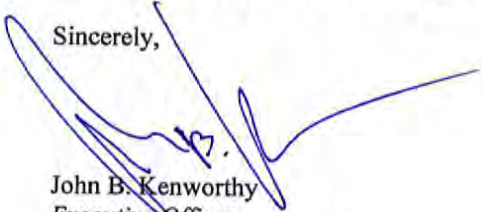
RE: Wetlands Permit Application
Antrim Wind Energy LLC
155 Fleet Street
Portsmouth, NH 03801-4050
Tax Map #: 212, 235, 236, 239; Lot #: 212-27, 30, & 34; 235-14; 236-1; 236-2; 239-1

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 is filed, the permit application, including 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,



John B. Kenworthy
Executive Officer
Antrim Wind Energy LLC
155 Fleet Street
Portsmouth, NH 03801-4050
Phone: 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

TABLE OF CONTENTS

| | | |
|------------|----------------------------------------------------------------------------|-----------|
| 1.0 | INTRODUCTION..... | 1 |
| 2.0 | CURRENT AND HISTORIC LAND USES..... | 2 |
| 2.1 | Current Land Use..... | 2 |
| 2.2 | Historic Land Use..... | 2 |
| 3.0 | WETLAND DELINEATION METHODOLOGY..... | 3 |
| 3.1 | Siting Alternatives..... | 3 |
| 3.2 | Wetland Delineation Method..... | 4 |
| 4.0 | WETLAND DELINEATION RESULTS..... | 5 |
| 4.1 | Vegetation..... | 5 |
| 4.2 | Hydrology..... | 5 |
| 4.3 | Soils..... | 6 |
| 4.4 | Wetland Descriptions..... | 9 |
| 4.5 | Waterbody Descriptions..... | 12 |
| 4.6 | Natural Resource Conservation Service Soil Series Descriptions..... | 13 |
| 5.0 | REFERENCES..... | 16 |

TABLES

| | | |
|-----------|----------------------------------------------|----|
| Table 4-1 | Summary of Wetlands within Project Area..... | 7 |
| Table 4-2 | Summary of Streams within Project Area..... | 12 |
| Table 4-3 | Soil Description Summary..... | 14 |

ATTACHMENTS

| | | |
|--------------|--------------------------------------------------------------------|----|
| Attachment A | Project Mapping..... | 17 |
| Attachment B | Professional Resume..... | 18 |
| Attachment C | U.S. Army Corps Of Engineers Wetland Determination Data Forms..... | 19 |

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 County, 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 10 wind turbines, an electrical collection system and interconnection substation, approximately 4 miles of 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 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 $\frac{3}{4}$ 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, and November 2011 (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-three (33) 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 33 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 33 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 four (4) 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 indicators. 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 ID | Wetland Types and Associations | Associated Wetland Impact | Cowardin Classification |
|-------------------------------------------------|-----------------------|-----------------------------------------------------------------------------|--------------------------------------|------------------------------------|
| 3 | AN1 | Isolated forested wetland. Contains VP1 | No direct impact | PFO1 |
| 3 | AN2 | Isolated forested wetland. Bat radar within wetland | 0.007 acre/316 sq. ft. Access road. | PFO4 |
| 3 | AN3 | Isolated forested wetland | No direct impact | PFO1 |
| 3 | AN4 | Isolated forested wetland. Contains VP2 | No direct impact | PFO1 |
| 3 | AN5 | Isolated forested wetland. Contains VP3 | No direct impact | PFO1 |
| 3 | AN6 | Isolated forested wetland | No direct impact | PFO1 |
| 2 | AN7 | Isolated forested wetland straddling property line | No direct impact | PFO1 |
| 2, 3 | AN8 | Forested wetland draining southeast associated with intermittent stream AN9 | 0.001 acre/34 sq. ft. Access road. | PFO4 |
| 2 | AN10 | Isolated forested wetland within skidder trail | No direct impact | PFO1 |
| 1, 2 | 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, 2 | 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 | 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 | 0.009 acre/379 sq. ft. Access road. | PFO1 |
| 1 | AN23 | Isolated forested wetland within skidder trail | 0.0004 acre/16 sq. ft. Access road. | PFO1 |
| 3 | AN24 | Isolated forested wetland. Associated with VP 5. ATV trail within wetland. | No direct impact | PFO1 |
| 3 | AN25 | Isolated forested wetland. Associated with VP 4. | No direct impact | PFO4 |
| 4 | AN26 | Forested wetland draining to the northwest along property line | No direct impact | PFO1 |
| 4 | AN27 | Forested wetland draining to the southeast. Associated with intermittent stream AN28. | 0.019 acre/ 815 sq. ft. Access Road | 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 | AN30 | Isolated forested wetland with ephemeral inlet and outlet | 0.02 acre/869 sq. ft. Substation | PFO1 |
| 1 | AN31 | Isolated scrub-shrub wetland within transmission ROW | 0.019 acre/848 sq. ft. Transmission tap structure and guys | PSS1 |
| 1 | AN32 | Isolated scrub-shrub wetland within transmission ROW | 0.036 acre/1,450 sq. ft. Access Road | PSS1 |
| 1 | AN33 | Isolated forested wetland within skidder trail | No direct impact | PFO1 |
| 1 | AN35 | Isolated forested an scrub-shrub wetland located in ROW and to the North of the ROW | No direct impact | PFO1/PSS1 |
| 3 | AN36 | Isolated forested wetland with peat soils | No direct impact | PFO1 |
| 3 | AN37 | Isolated forested wetland adjacent to ATV trail | No direct impact | PFO1 |
| 3 | AN38 | Isolated forested wetland with potential vernal pool | No direct impact | PFO1 |
| 4 | AN41 | Isolated forested wetland. | 0.083 acre/3,620 sq. ft. Turbine 9. | PFO1 |
| TOTAL IMPACT | | | 0.192 acre/8,349 sq. ft. | |

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.

Wetland AN1 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.

Wetland AN2 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.

Wetlands AN3, AN4 and AN5 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.

Wetland AN6 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.

Wetland AN7 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.

Wetland AN8 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.

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

Wetland AN13 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.

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

Wetland AN16 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.

Wetland AN18 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.

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

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

Wetland AN24 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.

Wetland AN25 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.

Wetland AN26 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.

Wetland AN27 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.

Wetland AN30 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.

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

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

Wetland AN35 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*).

Wetland AN36 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.

Wetland AN37 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.

Wetland AN38 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.

Wetland AN41 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.

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 | Intermittent | 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 |
| 1 | AN28a | Intermittent | No direct impact | |
| 1 | AN29 | Intermittent | 156 linear feet, 1 foot wide channel | |
| 1 | AN34 | Intermittent | No direct impact | Flows into AN17 |
| 2 | AN40 | Intermittent | No direct impact | |

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.

Stream AN17 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.

Stream AN19 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.

Stream AN28 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.

Stream AN28a 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.

Stream AN29 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.

Stream AN34 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.

Stream AN40 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.

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.

**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 |

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.

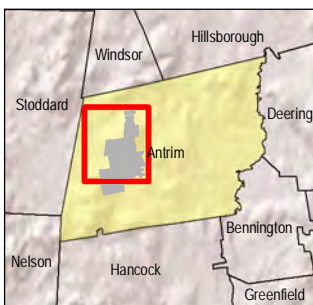
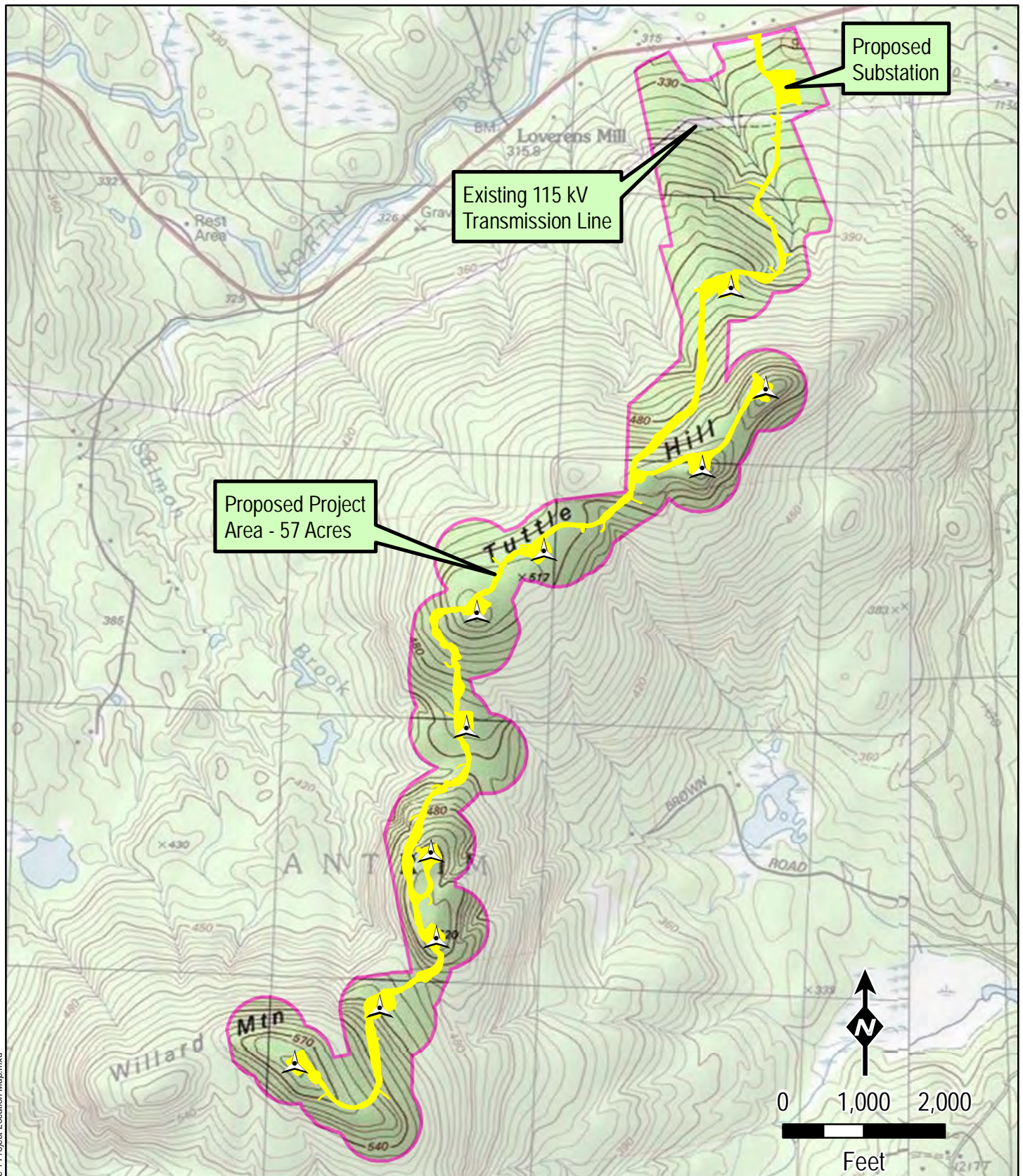
Marlow Series

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.




5.0 REFERENCES

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**ATTACHMENT A
PROJECT MAPPING**




Legend

-  Proposed WTG
-  Proposed Project Area - 57 Acres
-  Resource Survey Area



**ANTRIM WIND
ENERGY PROJECT**
354 KEENE ROAD, ANTRIM, NH

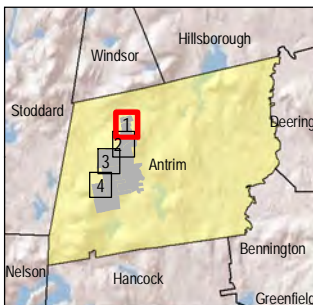
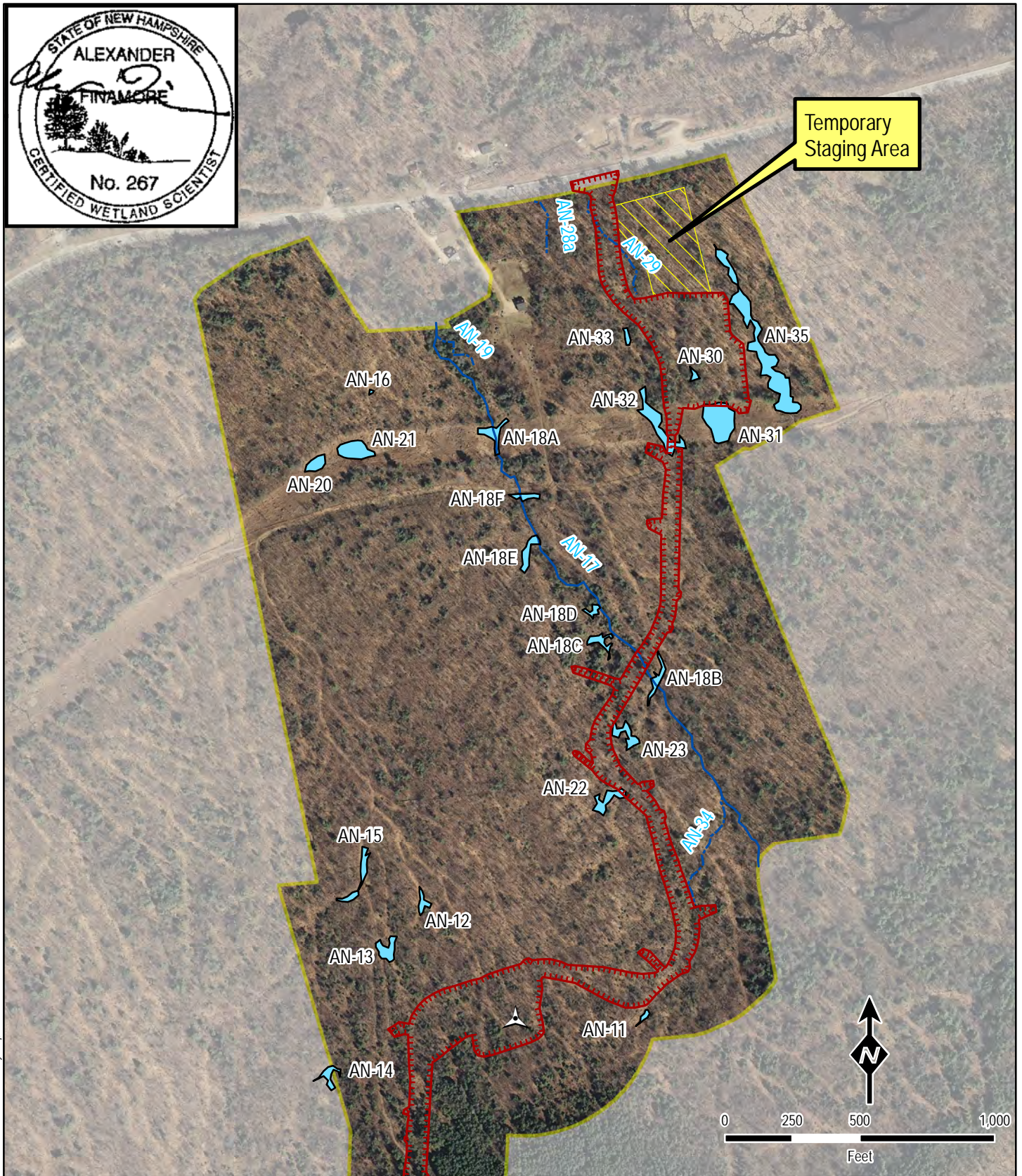
Figure 1
Project Location Map

Produced by: 

1/23/2012



Temporary
Staging Area



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | Stream Label |
| | Resource Survey Area | | Wetland Label |



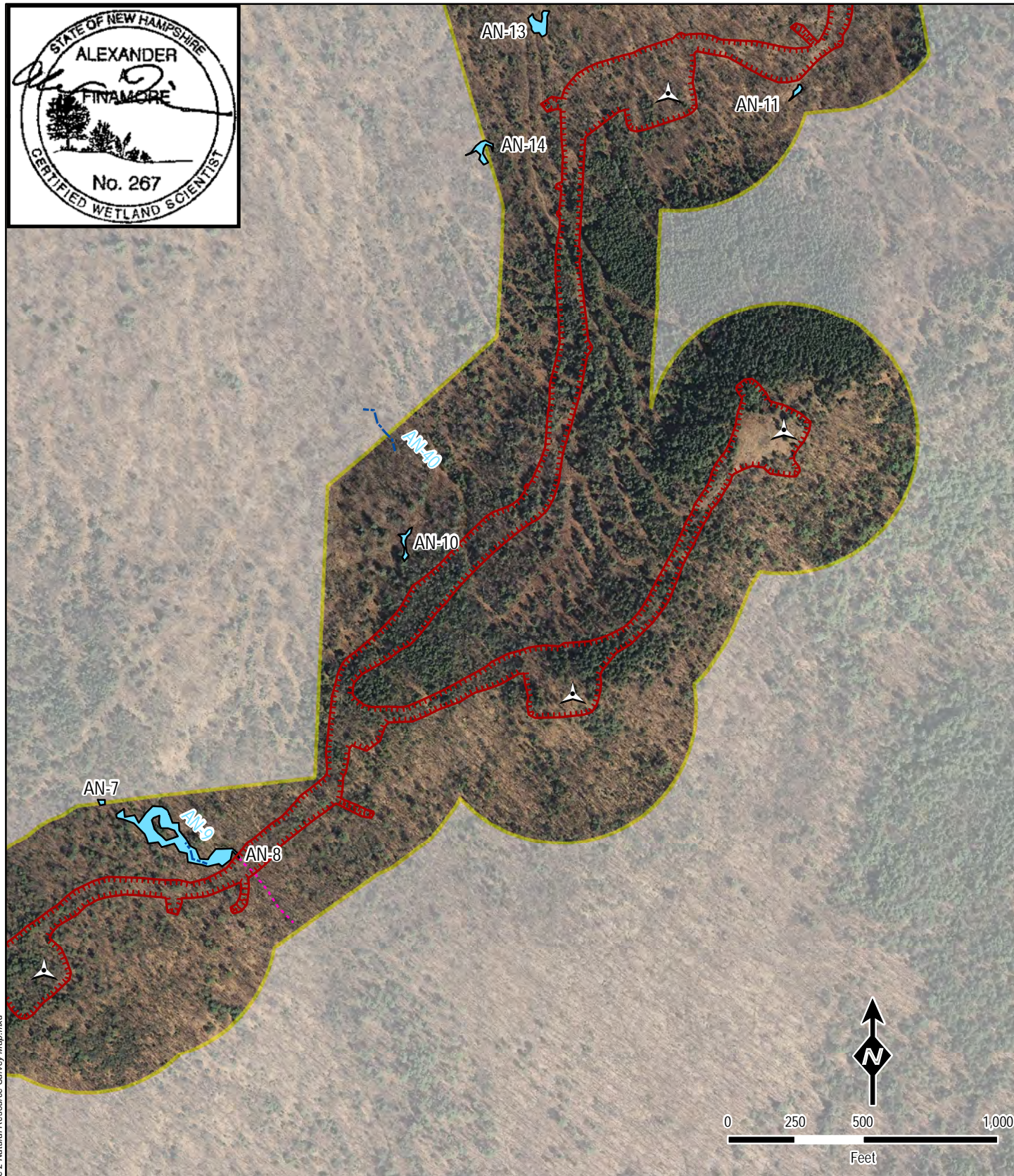
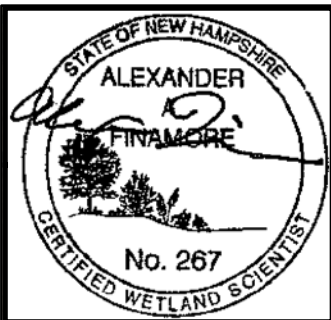
ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Figure 2

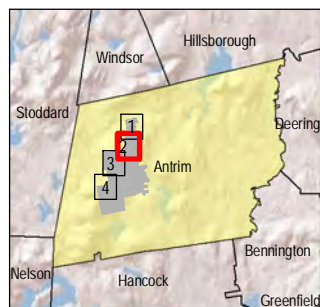
Natural Resource Survey Map
Map 1 of 4

Produced by: CTRC

1/25/2012



S:\Projects\TRC\Augusta\182878-Antrim Wind\Map\Figure 2 Natural Resource Survey Map.mxd



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | Stream Label |
| | Resource Survey Area | | Wetland Label |



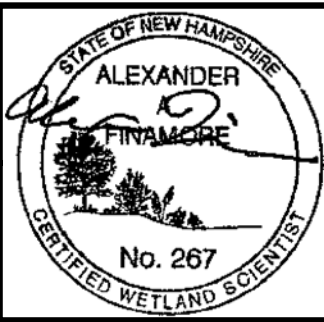
ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Figure 2

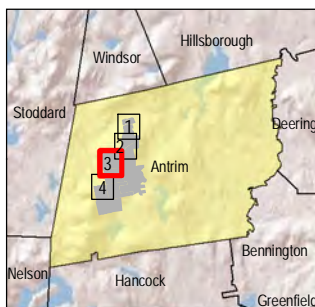
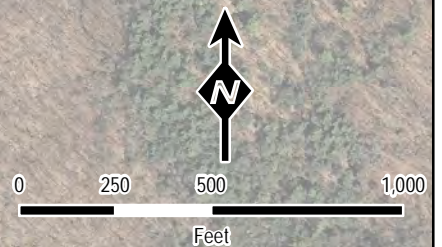
Natural Resource Survey Map
Map 2 of 4

Produced by: CTRC

1/25/2012



Potential Vernal Pool 7



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | |
| | Resource Survey Area | | Stream Label |
| | | | Wetland Label |



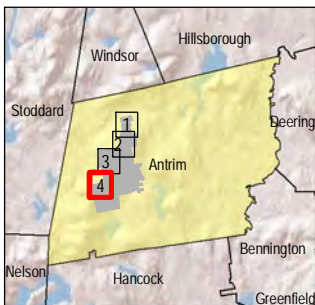
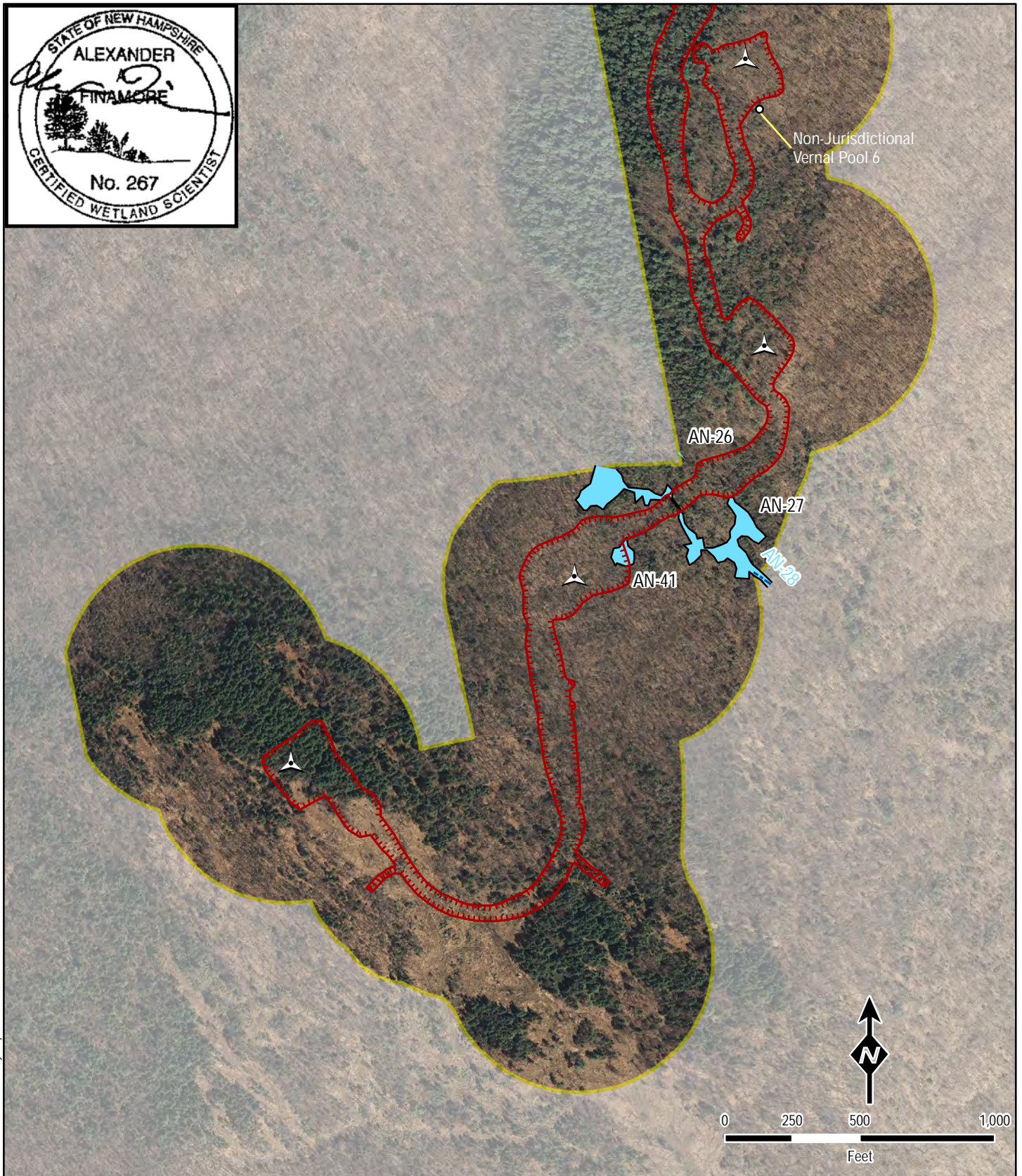
ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Figure 2

Natural Resource Survey Map
Map 3 of 4

Produced by: CTRC

1/25/2012



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | |
| | Resource Survey Area | | Stream Label |
| | | | Wetland Label |



ANTRIM WIND ENERGY PROJECT ANTRIM, NH

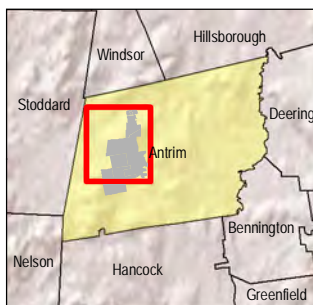
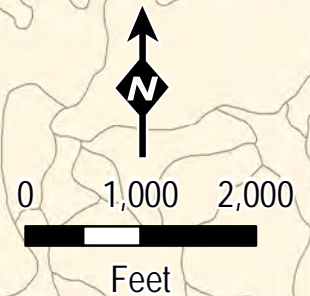
Figure 2

Natural Resource Survey Map
Map 4 of 4





Produced by: CTRC

1/25/2012

| Map Unit Symbol (MUSYM) | Map Unit Name |
|-------------------------------|------------------------------------------------------------------|
| 160B | Tunbridge-Lyman Monadnock complex, stony, 3 to 8 percent slopes |
| 160C | Tunbridge-Lyman Monadnock complex, stony, 8 to 15 percent slopes |
| 161C | Lyman-Tunbridge-Rock outcrop complex, 3 to 15 percent slopes |
| 161D | Lyman-Tunbridge-Rock outcrop complex, 3 to 15 percent slopes |
| 399 | Rock outcrop |
| 77C | Marlow stony loam, 8 to 15 percent slopes |
| 77D | Marlow stony loam, 15 to 35 percent slopes |




Legend

-  Proposed WTG
-  Proposed Project Area - 57 Acres
-  Resource Survey Area
-  NRCS SSURGO Soils



**ANTRIM WIND
ENERGY PROJECT**
354 KEENE ROAD, ANTRIM, NH

Figure 3
NRCS Soil Survey Map

Produced by: 

1/23/2012

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN1 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): hummocky Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

VP-1, Isolated, No overland drainage

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input checked="" type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? | |
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 4 | Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 3 | | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN1 Wet

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 50.0% | FAC |
| 2. <u>Picea mariana</u> | 20 | <input checked="" type="checkbox"/> 50.0% | FACW- |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 40 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> 25.0% | FAC |
| 2. <u>Picea mariana</u> | 15 | <input checked="" type="checkbox"/> 37.5% | FACW- |
| 3. <u>Vaccinium corymbosum</u> | 15 | <input checked="" type="checkbox"/> 37.5% | FACW- |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 40 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Carex intumescens</u> | 15 | <input checked="" type="checkbox"/> 45.5% | FACW+ |
| 2. <u>Osmunda cinnamomea</u> | 10 | <input checked="" type="checkbox"/> 30.3% | FACW |
| 3. <u>Coptis trifolia</u> | 8 | <input checked="" type="checkbox"/> 24.2% | FACW |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 33 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>83</u> | x 2 = <u>166</u> |
| FAC species <u>30</u> | x 3 = <u>90</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>113</u> (A) | <u>256</u> (B) |
| Prevalence Index = B/A = <u>2.265</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN1 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN1 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Fagus grandifolia</i> | 25 | <input checked="" type="checkbox"/> 30.1% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B) |
| 2. <i>Picea rubens</i> | 33 | <input checked="" type="checkbox"/> 39.8% | FACU | |
| 3. <i>Acer rubrum</i> | 25 | <input checked="" type="checkbox"/> 30.1% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 83 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 38 x 3 = 114 FACU species 91 x 4 = 364 UPL species 0 x 5 = 0 Column Totals: 129 (A) 478 (B) Prevalence Index = B/A = 3.705 |
| 1. <i>Picea rubens</i> | 10 | <input checked="" type="checkbox"/> 55.6% | FACU | |
| 2. <i>Fagus grandifolia</i> | 3 | <input type="checkbox"/> 16.7% | FACU | |
| 3. <i>Vaccinium angustifolium</i> | 5 | <input checked="" type="checkbox"/> 27.8% | FACU- | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 18 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <i>Aralia nudicaulis</i> | 5 | <input type="checkbox"/> 16.1% | FACU | |
| 2. <i>Lycopodium obscurum</i> | 10 | <input checked="" type="checkbox"/> 32.3% | FACU | |
| 3. <i>Malanthemum canadense</i> | 3 | <input type="checkbox"/> 9.7% | FAC- | |
| 4. <i>trillium spp.</i> | 3 | <input type="checkbox"/> 9.7% | | |
| 5. <i>Trientalis borealis</i> | 10 | <input checked="" type="checkbox"/> 32.3% | FAC | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 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. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 31 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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.

[illegible]



AN1 Wetland



AN1 Wetland



AN1 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN2 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO/PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated Bat Radar location

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|------------------------------------------------------------------------------------------|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 9 | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN2 Wet

| Tree Stratum (Plot size: 30') | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|-------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Picea mariana</i> | 25 | <input checked="" type="checkbox"/> 55.6% FACW- | Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. <i>Betula alleghaniensis</i> | 20 | <input checked="" type="checkbox"/> 44.4% FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 45 = Total Cover | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>100</u> x <u>1</u> = <u>100</u> FACW species <u>55</u> x <u>2</u> = <u>110</u> FAC species <u>30</u> x <u>3</u> = <u>90</u> FACU species <u>0</u> x <u>4</u> = <u>0</u> UPL species <u>0</u> x <u>5</u> = <u>0</u> Column Totals: <u>185</u> (A) <u>300</u> (B) Prevalence Index = B/A = <u>1.622</u> |
| 1. <i>Picea mariana</i> | 10 | <input checked="" type="checkbox"/> 33.3% FACW- | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <i>Spiraea latifolia</i> | 10 | <input checked="" type="checkbox"/> 33.3% FAC+ | |
| 3. <i>Vaccinium corymbosum</i> | 10 | <input checked="" type="checkbox"/> 33.3% FACW- | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 30 = Total Cover | | 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. |
| 1. <i>Eriophorum virginicum</i> | 100 | <input checked="" type="checkbox"/> 90.9% OBL | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| 2. <i>Osmunda cinnamomea</i> | 5 | <input type="checkbox"/> 4.5% FACW | |
| 3. <i>Rubus hispidoides</i> | 5 | <input type="checkbox"/> 4.5% FACW | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 110 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

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.

[illegible]

Project/Site: Antrim Wind Project **City/County:** Antrim **Sampling Date:** 10-Aug-11
Applicant/Owner: Eolian Renewable Energy, LLC **State:** NH **Sampling Point:** AN2 upland
Investigator(s): AF JG **Section, Township, Range:** S. T. R.
Landform (hillslope, terrace, etc.): Ridgetop **Local relief (concave, convex, none):** none **Slope:** 3.0 % / 1.7 °
Subregion (LRR or MLRA): **Lat.:** **Long.:** **Datum:** **NWI classification:**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

| Wetland Hydrology Indicators: | | | Secondary Indicators (minimum of 2 required) | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--|
| Primary Indicators (minimum of one required; check all that apply) | | | | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5) | | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Field Observations:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> <div style="width: 45%;"> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> </div> </div> </div> <div style="width: 35%;"> <p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> </div> | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | |
| Remarks: | | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN2 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|--------------------------------------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Quercus rubra</u> | 35 | <input checked="" type="checkbox"/> 58.3% FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B) |
| 2. <u>Pinus strobus</u> | 25 | <input checked="" type="checkbox"/> 41.7% FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') <div>60 = Total Cover</div> | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 20 x 3 = 60 FACU species 105 x 4 = 420 UPL species 0 x 5 = 0 Column Total s: 125 (A) 480 (B) Prevalence Index = B/A = 3.840 |
| 1. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 18.2% FAC | |
| 2. <u>Betula papyrifera</u> | 5 | <input type="checkbox"/> 9.1% FACU | |
| 3. <u>Fagus grandifolia</u> | 10 | <input checked="" type="checkbox"/> 18.2% FACU | |
| 4. <u>Picea rubens</u> | 25 | <input checked="" type="checkbox"/> 45.5% FACU | |
| 5. <u>Betula alleghaniensis</u> | 5 | <input type="checkbox"/> 9.1% FAC | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') <div>55 = Total Cover</div> | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Vaccinium angustifolium</u> | 5 | <input checked="" type="checkbox"/> 50.0% FACU- | |
| 2. <u>Trientalis borealis</u> | 5 | <input checked="" type="checkbox"/> 50.0% FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) <div>10 = Total Cover</div> | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| 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 upland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|-----------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 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 | | |
| | | | | | | | | | | |
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^1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

^2 Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ^3

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes☐

No☒

Remarks:



AN2 Wetland



AN2 Wetland



AN2 Wetland



AN2 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN3 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): hummocky Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Remarks: (Explain alternative procedures here or in a separate report.) No outlet, No VP | |

Hydrology

| | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (minimum of 2 required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <u> </u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <u> </u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u> | | | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN3 Wet

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: <u>5</u> (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 20 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Picea mariana</u> | 15 | <input checked="" type="checkbox"/> 37.5% | FACW- | Total % Cover of: <u>20</u> Multiply by: <u>20</u> |
| 2. <u>Acer rubrum</u> | 5 | <input type="checkbox"/> 12.5% | FAC | OBL species <u>20</u> x 1 = <u>20</u> |
| 3. <u>Vaccinium corymbosum</u> | 20 | <input checked="" type="checkbox"/> 50.0% | FACW- | FACW species <u>50</u> x 2 = <u>100</u> |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species <u>25</u> x 3 = <u>75</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>95</u> (A) <u>195</u> (B) |
| Herb Stratum (Plot size: 5') | 40 = Total Cover | | | Prevalence Index = B/A = <u>2.053</u> |
| 1. <u>Osmunda cinnamomea</u> | 15 | <input checked="" type="checkbox"/> 42.9% | FACW | Hydrophytic Vegetation Indicators: |
| 2. <u>Carex stricta</u> | 20 | <input checked="" type="checkbox"/> 57.1% | OBL | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 35 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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: AN3 Wet

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|------|------------------|--|--|------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type | Loc ² | | | | | |
| 0-5 | 10YR | 3/2 | 100% | | | | | | Sandy Loam | | |
| 5-10 | 2.5Y | 4/2 | | | | | | | Loamy Sand | I edge | |
| 10+ | | | | | | | | | | | |
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¹Type:

C=Concentration.

D=Depletion.

RM=Reduced Matrix,

CS=Covered or Coated Sand Grains

²Location:

PL=Pore Lining.

M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)☐ Histic Epipedon (A2)☐ Black Histic (A3)☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5)☒ Depleted Below Dark Surface (A11)☐ Thick Dark Surface (A12)☐ Sandy Muck Mineral (S1)☐ Sandy Gleyed Matrix (S4)☐ Sandy Redox (S5)☐ Stripped Matrix (S6)☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)☐ Loamy Mucky Mineral (F1) LRR K, L)☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)☐ Coast Prairie Redox (A16) (LRR K, L, R)☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)☐ Dark Surface (S7) (LRR K, L)☐ Polyvalue Below Surface (S8) (LRR K, L)☐ Thin Dark Surface (S9) (LRR K, L)☐ Iron-Manganese Masses (F12) (LRR K, L, R)☐ Piedmont Floodplain Soils (F19) (MLRA 149B)☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)☐ Red Parent Material (TF2)☐ Very Shallow Dark Surface (TF12)☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):Type: ledgeDepth (inches): 10

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN3 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): none Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

bouldery

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN3 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1. <u>Picea rubens</u> | 66 | <input checked="" type="checkbox"/> 66.7% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Pinus strobus</u> | 33 | <input checked="" type="checkbox"/> 33.3% | FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15') <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Rel.Strat. Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Picea rubens</u></td> <td>10</td> <td><input checked="" type="checkbox"/> 100.0%</td> <td>FACU</td> </tr> <tr> <td>2. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>3. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>4. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>5. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>6. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>7. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> </tbody> </table> | | | | | Absolute % Cover | Rel.Strat. Cover | Indicator Status | 1. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> 100.0% | FACU | 2. _____ | 0 | <input type="checkbox"/> 0.0% | | 3. _____ | 0 | <input type="checkbox"/> 0.0% | | 4. _____ | 0 | <input type="checkbox"/> 0.0% | | 5. _____ | 0 | <input type="checkbox"/> 0.0% | | 6. _____ | 0 | <input type="checkbox"/> 0.0% | | 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Prevalence Index worksheet: Total % Cover of: <u>99</u> = Total Cover Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>115</u> x 4 = <u>460</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>460</u> (B) Prevalence Index = B/A = <u>4.000</u> | | | | | | | | | | | | | | | | | | | | |
| | Absolute % Cover | Rel.Strat. Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> 100.0% | FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 5') <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Rel.Strat. Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Quercus rubra</u></td> <td>3</td> <td><input checked="" type="checkbox"/> 50.0%</td> <td>FACU-</td> </tr> <tr> <td>2. <u>Vaccinium angustifolium</u></td> <td>3</td> <td><input checked="" type="checkbox"/> 50.0%</td> <td>FACU-</td> </tr> <tr> <td>3. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>4. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>5. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>6. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>7. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>8. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>9. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>10. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>11. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>12. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> </tbody> </table> | | | | | Absolute % Cover | Rel.Strat. Cover | Indicator Status | 1. <u>Quercus rubra</u> | 3 | <input checked="" type="checkbox"/> 50.0% | FACU- | 2. <u>Vaccinium angustifolium</u> | 3 | <input checked="" type="checkbox"/> 50.0% | FACU- | 3. _____ | 0 | <input type="checkbox"/> 0.0% | | 4. _____ | 0 | <input type="checkbox"/> 0.0% | | 5. _____ | 0 | <input type="checkbox"/> 0.0% | | 6. _____ | 0 | <input type="checkbox"/> 0.0% | | 7. _____ | 0 | <input type="checkbox"/> 0.0% | | 8. _____ | 0 | <input type="checkbox"/> 0.0% | | 9. _____ | 0 | <input type="checkbox"/> 0.0% | | 10. _____ | 0 | <input type="checkbox"/> 0.0% | | 11. _____ | 0 | <input type="checkbox"/> 0.0% | | 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| | Absolute % Cover | Rel.Strat. Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Quercus rubra</u> | 3 | <input checked="" type="checkbox"/> 50.0% | FACU- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Vaccinium angustifolium</u> | 3 | <input checked="" type="checkbox"/> 50.0% | FACU- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: _____) <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Rel.Strat. Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>2. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>3. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> <tr> <td>4. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> <td></td> </tr> </tbody> </table> | | | | | Absolute % Cover | Rel.Strat. Cover | Indicator Status | 1. _____ | 0 | <input type="checkbox"/> 0.0% | | 2. _____ | 0 | <input type="checkbox"/> 0.0% | | 3. _____ | 0 | <input type="checkbox"/> 0.0% | | 4. _____ | 0 | <input type="checkbox"/> 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Absolute % Cover | Rel.Strat. Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

Soil

Sampling Point: AN3 Upland

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

| Depth (inches) | Matrix | | Redox Features | | | | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|--|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | | |
| 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 |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: bedrock

Depth (inches): 12

Hydric Soil Present?

Yes☐

No☒

Remarks:



AN3 Wetland



AN3 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN4 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): hummocky Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| VP-2 | |

Hydrology

| | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (minimum of 2 required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: sphagnum carpet | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN4 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|--------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 50 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 50 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>265</u> (B) Prevalence Index = B/A = <u>2.650</u> |
| 1. <u>Acer rubrum</u> | 15 | <input checked="" type="checkbox"/> 33.3% | FAC | |
| 2. <u>Vaccinium corymbosum</u> | 30 | <input checked="" type="checkbox"/> 66.7% | FACW- | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 45 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Osmunda cinnamomea</u> | 5 | <input checked="" type="checkbox"/> 100.0% | FACW | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 5 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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**

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN4 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): convex Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN4 Upland

| Tree Stratum (Plot size: 30') | | Absolute % Cover | Species? Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: | |
|---------------------------------------------------------------|----|-------------------------------------|---------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. Quercus rubra | 30 | <input checked="" type="checkbox"/> | 37.5% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: | 1 (A) |
| 2. Pinus strobus | 25 | <input checked="" type="checkbox"/> | 31.3% | FACU | Total Number of Dominant Species Across All Strata: | 7 (B) |
| 3. Picea rubens | 25 | <input checked="" type="checkbox"/> | 31.3% | FACU | Percent of dominant Species That Are OBL, FACW, or FAC: | 14.3% (A/B) |
| 4. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 5. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 6. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 7. | 0 | <input type="checkbox"/> | 0.0% | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | 80 | = Total Cover | | Prevalence Index worksheet: | |
| 1. Betula papyrifera | 5 | <input type="checkbox"/> | 10.0% | FACU | Total % Cover of: | Multiply by: |
| 2. Picea rubens | 15 | <input checked="" type="checkbox"/> | 30.0% | FACU | OBL spec ies | 0 x 1 = 0 |
| 3. Vaccinium angustifolium | 25 | <input checked="" type="checkbox"/> | 50.0% | FACU- | FACW spec ies | 0 x 2 = 0 |
| 4. Fagus grandifolia | 5 | <input type="checkbox"/> | 10.0% | FACU | FAC spec ies | 5 x 3 = 15 |
| 5. | 0 | <input type="checkbox"/> | 0.0% | | FACU spec ies | 135 x 4 = 540 |
| 6. | 0 | <input type="checkbox"/> | 0.0% | | UPL spec ies | 0 x 5 = 0 |
| 7. | 0 | <input type="checkbox"/> | 0.0% | | Column Total s: | 140 (A) 555 (B) |
| Herb Stratum (Plot size: 5') | | 50 | = Total Cover | | Prevalence Index = B/A = 3.964 | |
| 1. Lycopodium obscurum | 5 | <input checked="" type="checkbox"/> | 50.0% | FACU | Hydrophytic Vegetation Indicators: | |
| 2. Abies balsamea | 5 | <input checked="" type="checkbox"/> | 50.0% | FAC | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation | |
| 3. | 0 | <input type="checkbox"/> | 0.0% | | <input type="checkbox"/> Dominance Test is > 50% | |
| 4. | 0 | <input type="checkbox"/> | 0.0% | | <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ | |
| 5. | 0 | <input type="checkbox"/> | 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 6. | 0 | <input type="checkbox"/> | 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 7. | 0 | <input type="checkbox"/> | 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 8. | 0 | <input type="checkbox"/> | 0.0% | | Definitions of Vegetation Strata: | |
| 9. | 0 | <input type="checkbox"/> | 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. | |
| 10. | 0 | <input type="checkbox"/> | 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. | |
| 11. | 0 | <input type="checkbox"/> | 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | |
| 12. | 0 | <input type="checkbox"/> | 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. | |
| Woody Vine Stratum (Plot size:) | | 10 | = Total Cover | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| 1. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 2. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 3. | 0 | <input type="checkbox"/> | 0.0% | | | |
| 4. | 0 | <input type="checkbox"/> | 0.0% | | | |
| | | 0 | = Total Cover | | | |
| 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 Upland**

[illegible]



AN4 Wetland



AN4 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN5 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): hummocky Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Remarks: (Explain alternative procedures here or in a separate report.) Isolated, VP-3 | |

Hydrology

| | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (minimum of 2 required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: Sphagnum carpet | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN5 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|---------------------------------------------------------------|------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 15 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: <u>4</u> (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 15 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Vaccinium corymbosum</u> | 25 | <input checked="" type="checkbox"/> 62.5% | FACW- | Total % Cover of: <u>0</u> Multiply by: <u>0</u> |
| 2. <u>Picea mariana</u> | 5 | <input type="checkbox"/> 12.5% | FACW- | OBL species <u>0</u> x 1 = <u>0</u> |
| 3. <u>Spiraea latifolia</u> | 10 | <input checked="" type="checkbox"/> 25.0% | FAC+ | FACW species <u>96</u> x 2 = <u>192</u> |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species <u>25</u> x 3 = <u>75</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>121</u> (A) <u>267</u> (B) |
| Herb Stratum (Plot size: 5') | 40 = Total Cover | | | Prevalence Index = B/A = <u>2.207</u> |
| 1. <u>Scirpus cyperinus</u> | 66 | <input checked="" type="checkbox"/> 100.0% | FACW+ | Hydrophytic Vegetation Indicators: |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 66 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN5 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): hummocky Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | Secondary Indicators (minimum of 2 required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5) |

| | |
|---------------------------------------------------------------------------------------------------------------|-----------------|
| Field Observations: | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | |
| Remarks: | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN5 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|--------------------------------------------|------------------|
| 1. <u>Picea rubens</u> | 33 | <input checked="" type="checkbox"/> 39.8% | FACU |
| 2. <u>Pinus strobus</u> | 50 | <input checked="" type="checkbox"/> 60.2% | FACU |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 83 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Vaccinium corymbosum</u> | 5 | <input checked="" type="checkbox"/> 100.0% | FACW- |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Gaultheria procumbens</u> | 3 | <input checked="" type="checkbox"/> 27.3% | FACU |
| 2. <u>Vaccinium angustifolium</u> | 5 | <input checked="" type="checkbox"/> 45.5% | FACU- |
| 3. <u>Quercus rubra</u> | 3 | <input checked="" type="checkbox"/> 27.3% | FACU- |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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 <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>5</u> | x 2 = <u>10</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>94</u> | x 4 = <u>376</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Total s: <u>99</u> (A) | <u>386</u> (B) |
| Prevalence Index = B/A = <u>3.899</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN5 Upland



AN5 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN6 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input checked="" type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|-------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

sphagnum carpet

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN6 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------|-------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 25 | <input checked="" type="checkbox"/> 50.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. <u>Betula alleghaniensis</u> | 25 | <input checked="" type="checkbox"/> 50.0% | FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 50 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>111</u> x 2 = <u>222</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>206</u> (A) <u>477</u> (B) Prevalence Index = B/A = <u>2.316</u> |
| 1. <u>Vaccinium corymbosum</u> | 20 | <input checked="" type="checkbox"/> 36.4% FACW- | | |
| 2. <u>Acer rubrum</u> | 10 | <input type="checkbox"/> 18.2% FAC | | |
| 3. <u>Picea mariana</u> | 25 | <input checked="" type="checkbox"/> 45.5% FACW- | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 55 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Iris versicolor</u> | 15 | <input type="checkbox"/> 14.9% OBL | | |
| 2. <u>Coptis trifolia</u> | 33 | <input checked="" type="checkbox"/> 32.7% FACW | | |
| 3. <u>Cornus canadensis</u> | 20 | <input type="checkbox"/> 19.8% FAC- | | |
| 4. <u>Osmunda cinnamomea</u> | 33 | <input checked="" type="checkbox"/> 32.7% FACW | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 101 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 10-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN6 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN6 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Indicator Status | Dominance Test worksheet: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|--|-------------------------------|--------------------------------------------------|------------------------------|--------------------------------------------------|-----------------------------------|---------------------------------------------------|-----------------------------|---------------------------------------|-----------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------|---------------------------------|----------------|---------------------------------|----------------|---------------------------------|-----------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-------------------------------|----------------|
| 1. <u>Quercus rubra</u> | 45 | <input checked="" type="checkbox"/> 56.3% FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Acer rubrum</u> | 25 | <input checked="" type="checkbox"/> 31.3% FAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Tsuga canadensis</u> | 10 | <input type="checkbox"/> 12.5% FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15') <table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>80 = Total Cover</td> <td></td> </tr> <tr> <td>1. <u>Fagus grandifolia</u></td> <td>8 <input checked="" type="checkbox"/> 61.5% FACU</td> </tr> <tr> <td>2. <u>Picea rubens</u></td> <td>5 <input checked="" type="checkbox"/> 38.5% FACU</td> </tr> <tr> <td>3. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>4. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>5. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>6. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>7. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> </tbody> </table> | | | Absolute % Cover | Indicator Status | 80 = Total Cover | | 1. <u>Fagus grandifolia</u> | 8 <input checked="" type="checkbox"/> 61.5% FACU | 2. <u>Picea rubens</u> | 5 <input checked="" type="checkbox"/> 38.5% FACU | 3. _____ | 0 <input type="checkbox"/> 0.0% | 4. _____ | 0 <input type="checkbox"/> 0.0% | 5. _____ | 0 <input type="checkbox"/> 0.0% | 6. _____ | 0 <input type="checkbox"/> 0.0% | 7. _____ | 0 <input type="checkbox"/> 0.0% | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>73</u></td> <td>x 4 = <u>292</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>108</u> (A)</td> <td><u>407</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.769</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>30</u> | x 3 = <u>90</u> | FACU species <u>73</u> | x 4 = <u>292</u> | UPL species <u>5</u> | x 5 = <u>25</u> | Column Totals: <u>108</u> (A) | <u>407</u> (B) |
| Absolute % Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Fagus grandifolia</u> | 8 <input checked="" type="checkbox"/> 61.5% FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Picea rubens</u> | 5 <input checked="" type="checkbox"/> 38.5% FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species <u>30</u> | x 3 = <u>90</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species <u>73</u> | x 4 = <u>292</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species <u>5</u> | x 5 = <u>25</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: <u>108</u> (A) | <u>407</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 5') <table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>13 = Total Cover</td> <td></td> </tr> <tr> <td>1. <u>Trientalis borealis</u></td> <td>5 <input checked="" type="checkbox"/> 33.3% FAC</td> </tr> <tr> <td>2. <u>Medeola virginiana</u></td> <td>5 <input checked="" type="checkbox"/> 33.3% UPL</td> </tr> <tr> <td>3. <u>Vaccinium angustifolium</u></td> <td>3 <input checked="" type="checkbox"/> 20.0% FACU-</td> </tr> <tr> <td>4. <u>Aralla nudicaulis</u></td> <td>2 <input type="checkbox"/> 13.3% FACU</td> </tr> <tr> <td>5. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>6. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>7. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>8. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>9. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>10. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>11. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>12. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> </tbody> </table> | | | Absolute % Cover | Indicator Status | 13 = Total Cover | | 1. <u>Trientalis borealis</u> | 5 <input checked="" type="checkbox"/> 33.3% FAC | 2. <u>Medeola virginiana</u> | 5 <input checked="" type="checkbox"/> 33.3% UPL | 3. <u>Vaccinium angustifolium</u> | 3 <input checked="" type="checkbox"/> 20.0% FACU- | 4. <u>Aralla nudicaulis</u> | 2 <input type="checkbox"/> 13.3% FACU | 5. _____ | 0 <input type="checkbox"/> 0.0% | 6. _____ | 0 <input type="checkbox"/> 0.0% | 7. _____ | 0 <input type="checkbox"/> 0.0% | 8. _____ | 0 <input type="checkbox"/> 0.0% | 9. _____ | 0 <input type="checkbox"/> 0.0% | 10. _____ | 0 <input type="checkbox"/> 0.0% | 11. _____ | 0 <input type="checkbox"/> 0.0% | 12. _____ | 0 <input type="checkbox"/> 0.0% | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Absolute % Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Trientalis borealis</u> | 5 <input checked="" type="checkbox"/> 33.3% FAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Medeola virginiana</u> | 5 <input checked="" type="checkbox"/> 33.3% UPL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Vaccinium angustifolium</u> | 3 <input checked="" type="checkbox"/> 20.0% FACU- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <u>Aralla nudicaulis</u> | 2 <input type="checkbox"/> 13.3% FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: _____) <table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>15 = Total Cover</td> <td></td> </tr> <tr> <td>1. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>2. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>3. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>4. _____</td> <td>0 <input type="checkbox"/> 0.0%</td> </tr> <tr> <td>0 = Total Cover</td> <td></td> </tr> </tbody> </table> | | | Absolute % Cover | Indicator Status | 15 = Total Cover | | 1. _____ | 0 <input type="checkbox"/> 0.0% | 2. _____ | 0 <input type="checkbox"/> 0.0% | 3. _____ | 0 <input type="checkbox"/> 0.0% | 4. _____ | 0 <input type="checkbox"/> 0.0% | 0 = Total Cover | | 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. | | | | | | | | | | | | | | | | | | |
| Absolute % Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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: AN6 Upland

[illegible]



AN6 Wetland



AN6 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 11-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN7 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): hummocky Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated, extends past rock wall, ledge pocket

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input checked="" type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|--|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN7 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 25 | <input checked="" type="checkbox"/> 100.0% FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 25 = Total Cover | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>116</u> x 2 = <u>232</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>176</u> (A) <u>412</u> (B) Prevalence Index = B/A = <u>2.341</u> |
| 1. <u>Vaccinium corymbosum</u> | 50 | <input checked="" type="checkbox"/> 33.1% FACW- | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Acer rubrum</u> | 25 | <input type="checkbox"/> 16.6% FAC | |
| 3. <u>Spiraea latifolia</u> | 10 | <input type="checkbox"/> 6.6% FAC+ | |
| 4. _____ | 66 | <input checked="" type="checkbox"/> 43.7% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 151 = Total Cover | | 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. |
| 1. <u>Osmunda cinnamomea</u> | 66 | <input checked="" type="checkbox"/> 100.0% FACW | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 66 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

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:

AN7 Wet

Profile Description:

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Loc² | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------|--|--|--|------|----------------------|---------|
| | Color (moist) | % | Color (moist) | % | Type¹ | | | | | | |
| 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 |
| | | | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R,
MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: bedrock

Depth (inches): 9

Hydric Soil Present?

Yes☒

No☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 11-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN7 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): concave Slope: 12.5 % / 7.1 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN7 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Betula papyrifera</u> | 15 | <input checked="" type="checkbox"/> 20.5% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B) |
| 2. <u>Quercus rubra</u> | 33 | <input checked="" type="checkbox"/> 45.2% | FACU- | |
| 3. <u>Acer rubrum</u> | 25 | <input checked="" type="checkbox"/> 34.2% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 73 = Total Cover | | | | 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 Column Totals: 151 (A) 584 (B) Prevalence Index = B/A = 3.868 |
| Sapling/Shrub Stratum (Plot size: 15') | | | | |
| 1. <u>Fagus grandifolia</u> | 33 | <input checked="" type="checkbox"/> 76.7% | FACU | |
| 2. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> 23.3% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 43 = Total Cover | | | | |
| Herb Stratum (Plot size: 5') | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Vaccinium angustifolium</u> | 25 | <input checked="" type="checkbox"/> 71.4% | FACU- | |
| 2. <u>Lycopodium obscurum</u> | 5 | <input type="checkbox"/> 14.3% | FACU | |
| 3. <u>Polygonatum pubescens</u> | 5 | <input type="checkbox"/> 14.3% | UPL | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 35 = Total Cover | | | | 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. |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 0 = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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:

AN7 Upland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|-----------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-2 | 10YR | 3/2 | | | | | | Loam | | |
| 2-4 | 2.5YR | 5/1 | | | | | | Fine Loamy Sand | | |
| 4-9 | 10YR | 4/4 | | | | | | Fine Sandy Loam | | |
| 9+ | | | | | | | | | bedrock | |
| | | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: bedrock

Depth (inches): 9

Hydric Soil Present?

Yes☐

No☒

Remarks:



AN7 Wetland



AN7 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 11-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN8 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Narrow PFO drainage through boulder field into overland ephemeral drainages to south with upland species

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|---|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN8 Wet

| Tree Stratum (Plot size: 30') | Absolute % Cover | Indicator Status | Dominance Test worksheet: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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-|---------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|---------------|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|---------------|--|--|------------------------------------------------------------------------------------------------------|
| 1. <i>Betula alleghaniensis</i> | 25 | <input checked="" type="checkbox"/> 50.0% FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <i>Acer rubrum</i> | 25 | <input checked="" type="checkbox"/> 50.0% FAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1. <i>Vaccinium corymbosum</i> | 5 | <input checked="" type="checkbox"/> 23.8% FACW- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <i>Spiraea latifolia</i> | 10 | <input checked="" type="checkbox"/> 47.6% FAC+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <i>Picea rubens</i> | 3 | <input type="checkbox"/> 14.3% FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <i>Betula alleghaniensis</i> | 3 | <input type="checkbox"/> 14.3% FAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Absolute % Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <i>Impatiens capensis</i> | 75 | <input checked="" type="checkbox"/> 82.4% FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <i>Osmunda cinnamomea</i> | 5 | <input type="checkbox"/> 5.5% FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <i>Onoclea sensibilis</i> | 3 | <input type="checkbox"/> 3.3% FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <i>Carex intumescens</i> | 3 | <input type="checkbox"/> 3.3% FACW+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. <i>Violet spp.</i> | 5 | <input type="checkbox"/> 5.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: _____) <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> </tr> <tr> <td>2. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> </tr> <tr> <td>3. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> </tr> <tr> <td>4. _____</td> <td>0</td> <td><input type="checkbox"/> 0.0%</td> </tr> <tr> <td colspan="3"> = Total Cover </td> </tr> </tbody> </table> | | | | Absolute % Cover | Indicator Status | 1. _____ | 0 | <input type="checkbox"/> 0.0% | 2. _____ | 0 | <input type="checkbox"/> 0.0% | 3. _____ | 0 | <input type="checkbox"/> 0.0% | 4. _____ | 0 | <input type="checkbox"/> 0.0% | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Absolute % Cover | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | Prevalence Index worksheet: Total % Cover of: <u>157</u> (A) Multiply by: <u>383</u> (B) Prevalence Index = B/A = <u>2.439</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 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 | |
| | | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 11-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN8 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope: 7.0 % / 4.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN8 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Quercus rubra</u> | 25 | <input checked="" type="checkbox"/> 28.4% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B) |
| 2. <u>Pinus strobus</u> | 33 | <input checked="" type="checkbox"/> 37.5% | FACU | |
| 3. <u>Betula papyrifera</u> | 10 | <input type="checkbox"/> 11.4% | FACU | |
| 4. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 22.7% | FAC | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 88 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>119</u> x 4 = <u>476</u> UPL species <u>26</u> x 5 = <u>130</u> Column Totals: <u>165</u> (A) <u>666</u> (B) Prevalence Index = B/A = <u>4.036</u> |
| 1. <u>Fagus grandifolia</u> | 40 | <input checked="" type="checkbox"/> 80.0% | FACU | |
| 2. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> 20.0% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 50 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 1 | <input type="checkbox"/> 3.7% | FACU | |
| 2. <u>Medeola virginiana</u> | 1 | <input type="checkbox"/> 3.7% | UPL | |
| 3. <u>Polygonatum pubescens</u> | 25 | <input checked="" type="checkbox"/> 92.6% | UPL | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 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. |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 27 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN8 Upland



AN8 Wetland



AN8 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

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 time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Small isolated PFO seep into skidder trail

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 1 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | |

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

Remarks:

drainage patterns saturated to surface, 1" flowing water near seep

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: **AN10 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: | |
|-----------------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. <u>Betula alleghaniensis</u> | 15 | <input checked="" type="checkbox"/> 50.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: | 5 (A) |
| 2. <u>Fraxinus pennsylvanica</u> | 15 | <input checked="" type="checkbox"/> 50.0% | FACW | Total Number of Dominant Species Across All Strata: | 6 (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: | 83.3% (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| Sapling/Shrub Stratum (Plot size: 15') | 30 = Total Cover | | | Prevalence Index worksheet: | |
| 1. <u>Acer pensylvanicum</u> | 50 | <input checked="" type="checkbox"/> 76.9% | FACU | Total % Cover of: | Multiply by: |
| 2. <u>Betula alleghaniensis</u> | 15 | <input checked="" type="checkbox"/> 23.1% | FAC | OBL species | 5 x 1 = 5 |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | FACW species | 88 x 2 = 176 |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species | 30 x 3 = 90 |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species | 50 x 4 = 200 |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species | 0 x 5 = 0 |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: | 173 (A) 471 (B) |
| | 65 = Total Cover | | | Prevalence Index = B/A = 2.723 | |
| Herb Stratum (Plot size: 5') | | | | Hydrophytic Vegetation Indicators: | |
| 1. <u>Osmunda cinnamomea</u> | 33 | <input checked="" type="checkbox"/> 42.3% | FACW | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation | |
| 2. <u>Impatiens capensis</u> | 40 | <input checked="" type="checkbox"/> 51.3% | FACW | <input checked="" type="checkbox"/> Dominance Test is > 50% | |
| 3. <u>Carex lurida</u> | 5 | <input type="checkbox"/> 6.4% | OBL | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| Woody Vine Stratum (Plot size: _____) | 78 = Total Cover | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| | 0 = Total Cover | | | | |

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:

AN10 Wet

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|-----------------|----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-6 | 10YR | 3/2 | 100% | | | | | | Sandy Loam | | |
| 6-10 | 2.5Y | 4/2 | 90% | 10YR | 5/8 | 10% | C | M | Fine Sandy Loam | bouldery | |
| 10+ | | | | | | | | | | | |
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¹Type:

C=Concentration.
D=Depletion.
RM=Reduced Matrix,
CS=Covered or Coated Sand Grains

²Location:

PL=Pore Lining.
M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

bouldery

Depth (inches):

10

Hydric Soil Present?

Yes

No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 11-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN10 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN10 Upland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Tsuga canadensis</u> | 40 | <input checked="" type="checkbox"/> 42.1% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B) |
| 2. <u>Betula papyrifera</u> | 25 | <input checked="" type="checkbox"/> 26.3% | FACU | |
| 3. <u>Fraxinus pennsylvanica</u> | 15 | <input type="checkbox"/> 15.8% | FACW | |
| 4. <u>Picea rubens</u> | 15 | <input type="checkbox"/> 15.8% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 95 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>155</u> x 4 = <u>620</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>240</u> (A) <u>860</u> (B) Prevalence Index = B/A = <u>3.583</u> |
| 1. <u>Acer rubrum</u> | 50 | <input checked="" type="checkbox"/> 76.9% | FAC | |
| 2. <u>Picea rubens</u> | 15 | <input checked="" type="checkbox"/> 23.1% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 65 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Trientalis borealis</u> | 20 | <input checked="" type="checkbox"/> 25.0% | FAC | |
| 2. <u>Aralia nudicaulis</u> | 50 | <input checked="" type="checkbox"/> 62.5% | FACU | |
| 3. <u>Dryopteris intermedia</u> | 10 | <input type="checkbox"/> 12.5% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 80 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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: AN10 Upland

[illegible]



AN10 Upland



AN10 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN11 Wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 7.0 % / 4.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

skiddered PSS below moose wallow

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: **AN11 Wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------------------------------------------------------|------------------|-------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____ | | <input type="checkbox"/> 0.0% | | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | | Prevalence Index worksheet: Total % Cover of: <u>25</u> Multiply by: <u>1</u> = <u>25</u> OBL species <u>25</u> x <u>1</u> = <u>25</u> FACW species <u>63</u> x <u>2</u> = <u>126</u> FAC species <u>5</u> x <u>3</u> = <u>15</u> FACU species <u>0</u> x <u>4</u> = <u>0</u> UPL species <u>0</u> x <u>5</u> = <u>0</u> Column Totals: <u>93</u> (A) <u>166</u> (B) Prevalence Index = B/A = <u>1.785</u> |
| = Total Cover | | | | |
| 1. <u>Spiraea tomentosa</u> | 15 | <input checked="" type="checkbox"/> 75.0% FACW | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Betula alleghaniensis</u> | 5 | <input checked="" type="checkbox"/> 25.0% FAC | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: 5') | | | | |
| 1. <u>Onoclea sensibilis</u> | 20 | <input checked="" type="checkbox"/> 27.4% FACW | | |
| 2. <u>Scirpus cyperinus</u> | 20 | <input checked="" type="checkbox"/> 27.4% FACW+ | | |
| 3. <u>Carex crinita</u> | 25 | <input checked="" type="checkbox"/> 34.2% OBL | | |
| 4. <u>Osmunda cinnamomea</u> | 5 | <input type="checkbox"/> 6.8% FACW | | |
| 5. <u>Calamagrostis canadensis</u> | 3 | <input type="checkbox"/> 4.1% FACW+ | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | 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. |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| = Total Cover | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | | | | |
| 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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN11 Up

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 20.0 % / 11.3 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN11 Up

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. <i>Fagus grandifolia</i> | 20 | <input checked="" type="checkbox"/> 22.2% | FACU |
| 2. <i>Acer saccharum</i> | 60 | <input checked="" type="checkbox"/> 66.7% | FACU- |
| 3. <i>Quercus rubra</i> | 10 | <input type="checkbox"/> 11.1% | FACU- |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 90 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | |
| 1. <i>Quercus rubra</i> | 20 | <input checked="" type="checkbox"/> 23.5% | FACU- |
| 2. <i>Picea rubens</i> | 20 | <input checked="" type="checkbox"/> 23.5% | FACU |
| 3. <i>Betula alleghaniensis</i> | 15 | <input type="checkbox"/> 17.6% | FAC |
| 4. <i>Acer saccharum</i> | 10 | <input type="checkbox"/> 11.8% | FACU- |
| 5. <i>Ostrya virginiana</i> | 20 | <input checked="" type="checkbox"/> 23.5% | FACU- |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 85 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. <i>Dennstaedtia punctilobula</i> | 10 | <input checked="" type="checkbox"/> 76.9% | UPL |
| 2. <i>Trientalis borealis</i> | 3 | <input checked="" type="checkbox"/> 23.1% | FAC |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 13 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 14.3% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>0</u> | x 2 = <u>0</u> |
| FAC species <u>18</u> | x 3 = <u>54</u> |
| FACU species <u>160</u> | x 4 = <u>640</u> |
| UPL species <u>10</u> | x 5 = <u>50</u> |
| Column Totals: <u>188</u> (A) | <u>744</u> (B) |
| Prevalence Index = B/A = <u>3.957</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

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

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Boulders

Depth (inches):

15+

Hydric Soil Present?

Yes

No

Remarks:



AN11 Upland



AN11 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an12 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Skiddered PSS

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

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): 3

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an12 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 0 = Total Cover | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>125</u> x 2 = <u>250</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>265</u> (B) Prevalence Index = B/A = <u>1.893</u> |
| 1. <u>Spiraea alba</u> | 25 | <input checked="" type="checkbox"/> 33.3% FACW+ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Spiraea tomentosa</u> | 50 | <input checked="" type="checkbox"/> 66.7% FACW | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 75 = Total Cover | | 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. |
| 1. <u>Carex crinita</u> | 15 | <input checked="" type="checkbox"/> 23.1% OBL | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| 2. <u>Onoclea sensibilis</u> | 25 | <input checked="" type="checkbox"/> 38.5% FACW | |
| 3. <u>Scirpus cyperinus</u> | 5 | <input type="checkbox"/> 7.7% FACW+ | |
| 4. <u>Rubus hispidus</u> | 20 | <input checked="" type="checkbox"/> 30.8% FACW | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 65 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an12 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

recently cut

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an12 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Quercus rubra</u> | 15 | <input checked="" type="checkbox"/> 60.0% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B) |
| 2. <u>Tsuga canadensis</u> | 10 | <input checked="" type="checkbox"/> 40.0% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 25 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>0</u> x <u>2</u> = <u>0</u> FAC species <u>10</u> x <u>3</u> = <u>30</u> FACU species <u>88</u> x <u>4</u> = <u>352</u> UPL species <u>90</u> x <u>5</u> = <u>450</u> Column Totals: <u>188</u> (A) <u>832</u> (B) Prevalence Index = B/A = <u>4.426</u> |
| 1. <u>Acer pensylvanicum</u> | 20 | <input checked="" type="checkbox"/> 44.4% | FACU | |
| 2. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> 22.2% | FAC | |
| 3. <u>Acer saccharum</u> | 15 | <input checked="" type="checkbox"/> 33.3% | FACU- | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 45 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Dennstaedtia punctilobula</u> | 90 | <input checked="" type="checkbox"/> 76.3% | UPL | |
| 2. <u>Solidago canadensis</u> | 10 | <input type="checkbox"/> 8.5% | FACU | |
| 3. <u>Rubus alumnus</u> | 10 | <input type="checkbox"/> 8.5% | FACU- | |
| 4. <u>Dryopteris intermedia</u> | 5 | <input type="checkbox"/> 4.2% | FACU | |
| 5. <u>Aralla nudicaulis</u> | 3 | <input type="checkbox"/> 2.5% | FACU | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 118 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

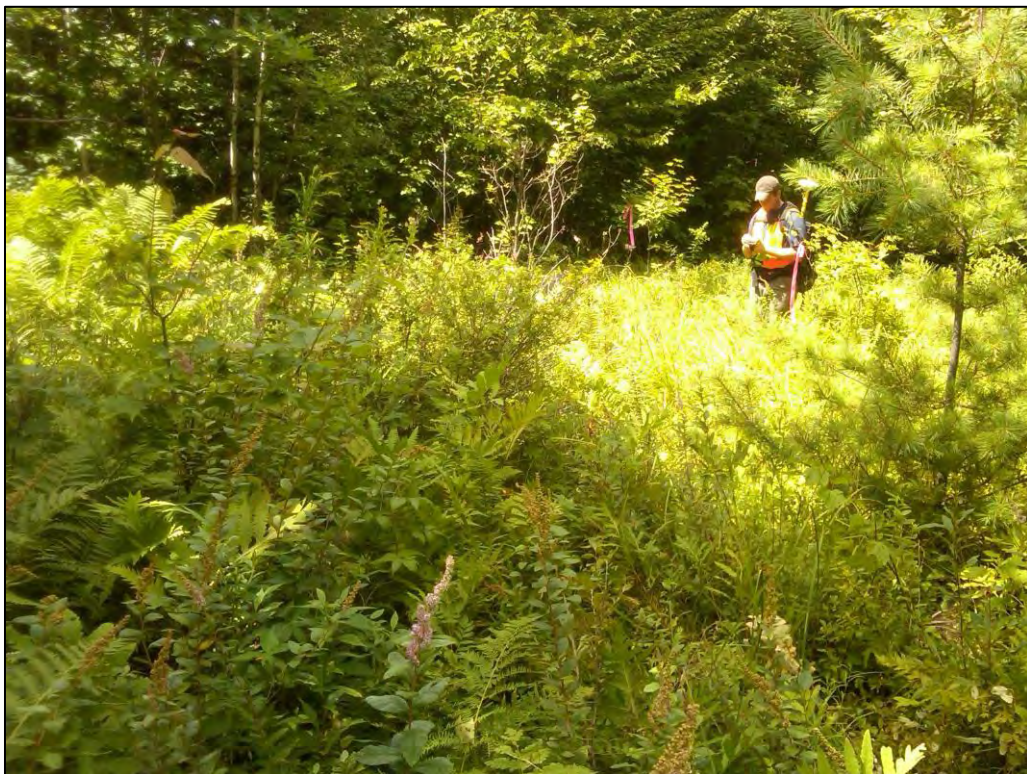
Remarks: (Include photo numbers here or on a separate sheet.)

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

[illegible]



AN12 Upland



AN12 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an13 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) Isolated lay down yard wetland adjacent to ATV trail | | | |

Hydrology

| | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (minimum of 2 required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 3 | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: an13 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|---------------------|-------------------------------------------|---------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | |
| 1. <u>Spiraea tomentosa</u> | 66 | <input checked="" type="checkbox"/> 72.5% | FACW |
| 2. <u>Acer rubrum</u> | 10 | <input type="checkbox"/> 11.0% | FAC |
| 3. <u>Spiraea alba</u> | 15 | <input type="checkbox"/> 16.5% | FACW+ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 91 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. <u>Carex lurida</u> | 8 | <input type="checkbox"/> 10.1% | OBL |
| 2. <u>Onoclea sensibilis</u> | 5 | <input type="checkbox"/> 6.3% | FACW |
| 3. <u>Eupatorium perfoliatum</u> | 3 | <input type="checkbox"/> 3.8% | FACW+ |
| 4. <u>Rubus hispidus</u> | 15 | <input type="checkbox"/> 19.0% | FACW |
| 5. <u>Carex crinita</u> | 25 | <input checked="" type="checkbox"/> 31.6% | OBL |
| 6. <u>Scirpus cyperinus</u> | 3 | <input type="checkbox"/> 3.8% | FACW+ |
| 7. <u>Carex trisperma</u> | 20 | <input checked="" type="checkbox"/> 25.3% | OBL |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 79 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>53</u> | x 1 = <u>53</u> |
| FACW species <u>107</u> | x 2 = <u>214</u> |
| FAC species <u>10</u> | x 3 = <u>30</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>170</u> (A) | <u>297</u> (B) |
| Prevalence Index = B/A = <u>1.747</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 12-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an13 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 4.0 % / 2.3 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an13 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|------------------------------------------------------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer saccharum</u> | 10 | <input checked="" type="checkbox"/> 66.7% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B) |
| 2. <u>Picea rubens</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') <div style="float: right;">15 = Total Cover</div> | | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 20 x 2 = 40 FAC species 0 x 3 = 0 FACU species 193 x 4 = 772 UPL species 5 x 5 = 25 Column Total s: 218 (A) 837 (B) Prevalence Index = B/A = 3.839 |
| 1. <u>Acer pensylvanicum</u> | 33 | <input checked="" type="checkbox"/> 32.0% | FACU | |
| 2. <u>Prunus serotina</u> | 10 | <input type="checkbox"/> 9.7% | FACU | |
| 3. <u>Acer saccharum</u> | 50 | <input checked="" type="checkbox"/> 48.5% | FACU- | |
| 4. <u>Populus tremula</u> | 10 | <input type="checkbox"/> 9.7% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') <div style="float: right;">103 = Total Cover</div> | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 75 | <input checked="" type="checkbox"/> 75.0% | FACU | |
| 2. <u>Rubus hispidus</u> | 20 | <input checked="" type="checkbox"/> 20.0% | FACW | |
| 3. <u>Dennstaedtia punctilobula</u> | 5 | <input type="checkbox"/> 5.0% | UPL | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) <div style="float: right;">100 = Total Cover</div> | | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| <div style="text-align: right;">0 = Total Cover</div> | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN13 Upland



AN13 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an14 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 10.0 % / 5.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS within skidder trail

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

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): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

sphagnum 25% cover

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: an14 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|---------------------|------------------------------------------------|---------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | |
| 1. <u>Spiraea tomentosa</u> | 20 | <input checked="" type="checkbox"/> 57.1% FACW | |
| 2. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 28.6% FAC | |
| 3. <u>Fraxinus pennsylvanica</u> | 5 | <input type="checkbox"/> 14.3% FACW | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 35 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. <u>Onoclea sensibilis</u> | 40 | <input checked="" type="checkbox"/> 46.5% FACW | |
| 2. <u>Osmunda cinnamomea</u> | 10 | <input type="checkbox"/> 11.6% FACW | |
| 3. <u>Eupatoriadelphus maculatus</u> | 8 | <input type="checkbox"/> 9.3% FACW | |
| 4. <u>Scirpus cyperinus</u> | 5 | <input type="checkbox"/> 5.8% FACW+ | |
| 5. <u>Carex lurida</u> | 15 | <input checked="" type="checkbox"/> 17.4% OBL | |
| 6. <u>Rubus idaeus</u> | 8 | <input type="checkbox"/> 9.3% FAC- | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 86 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>15</u> | x 1 = <u>15</u> |
| FACW species <u>88</u> | x 2 = <u>176</u> |
| FAC species <u>18</u> | x 3 = <u>54</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>121</u> (A) | <u>245</u> (B) |
| Prevalence Index = B/A = <u>2.025</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN14 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 10.0 % / 5.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

logged upland

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN14 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Picea rubens</i> | 20 | <input checked="" type="checkbox"/> 50.0% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B) |
| 2. <i>Populus tremula</i> | 20 | <input checked="" type="checkbox"/> 50.0% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 40 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 30 x 3 = 90 FACU species 93 x 4 = 372 UPL species 0 x 5 = 0 Column Totals: 123 (A) 462 (B) Prevalence Index = B/A = 3.756 |
| 1. <i>Acer pensylvanicum</i> | 40 | <input checked="" type="checkbox"/> 83.3% | FACU | |
| 2. <i>Acer saccharum</i> | 8 | <input type="checkbox"/> 16.7% | FACU- | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 48 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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. |
| 1. <i>Thelypteris noveboracensis</i> | 25 | <input checked="" type="checkbox"/> 71.4% | FAC | |
| 2. <i>Aralia nudicaulis</i> | 5 | <input type="checkbox"/> 14.3% | FACU | |
| 3. <i>Trientalis borealis</i> | 5 | <input type="checkbox"/> 14.3% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 35 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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.

[illegible]



AN14 Wetland



AN14 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an15 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS within skidder trail

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|------------------------------------------------------------------------------------------|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 5 | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an15 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Spiraea tomentosa</u> | 66 | <input checked="" type="checkbox"/> 81.5% | FACW |
| 2. <u>Acer rubrum</u> | 10 | <input type="checkbox"/> 12.3% | FAC |
| 3. <u>Fraxinus pennsylvanica</u> | 5 | <input type="checkbox"/> 6.2% | FACW |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 81 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Carex lurida</u> | 20 | <input checked="" type="checkbox"/> 32.8% | OBL |
| 2. <u>Eupatoriadelphus dubius</u> | 5 | <input type="checkbox"/> 8.2% | FACW |
| 3. <u>Scirpus cyperinus</u> | 3 | <input type="checkbox"/> 4.9% | FACW+ |
| 4. <u>Onoclea sensibilis</u> | 25 | <input checked="" type="checkbox"/> 41.0% | FACW |
| 5. <u>Carex crinita</u> | 8 | <input type="checkbox"/> 13.1% | OBL |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 61 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>28</u> | x 1 = <u>28</u> |
| FACW species <u>104</u> | x 2 = <u>208</u> |
| FAC species <u>10</u> | x 3 = <u>30</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>142</u> (A) | <u>266</u> (B) |
| Prevalence Index = B/A = <u>1.873</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an15 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an15 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Fagus grandifolia</u> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B) |
| 2. <u>Fraxinus americana</u> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU | |
| 3. <u>Betula alleghaniensis</u> | 10 | <input type="checkbox"/> 16.7% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 60 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>112</u> x 4 = <u>448</u> UPL species <u>1</u> x 5 = <u>5</u> Column Totals: <u>128</u> (A) <u>498</u> (B) Prevalence Index = B/A = <u>3.891</u> |
| 1. <u>Acer pensylvanicum</u> | 50 | <input checked="" type="checkbox"/> 83.3% | FACU | |
| 2. <u>Fagus grandifolia</u> | 5 | <input type="checkbox"/> 8.3% | FACU | |
| 3. <u>Picea rubens</u> | 5 | <input type="checkbox"/> 8.3% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 60 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Fraxinus americana</u> | 1 | <input type="checkbox"/> 12.5% | FACU | |
| 2. <u>Acer saccharum</u> | 1 | <input type="checkbox"/> 12.5% | FACU- | |
| 3. <u>Malanthemum canadense</u> | 5 | <input checked="" type="checkbox"/> 62.5% | FAC- | |
| 4. <u>Polygonatum pubescens</u> | 1 | <input type="checkbox"/> 12.5% | UPL | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 8 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

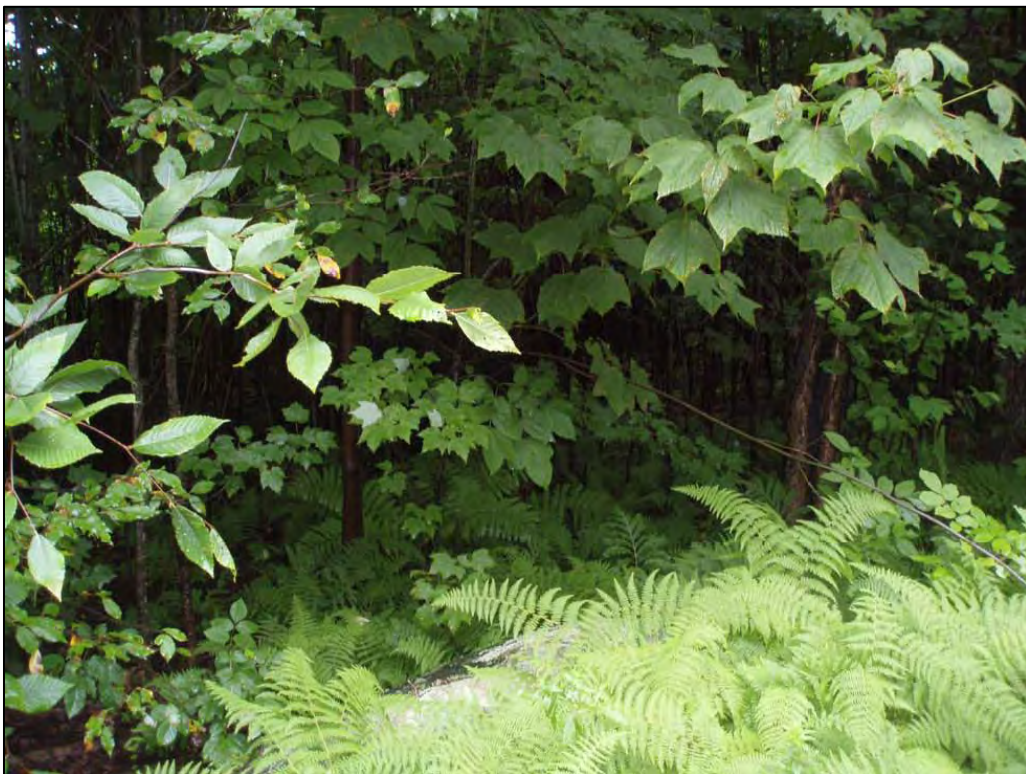
Remarks: (Include photo numbers here or on a separate sheet.)

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

[illegible]



AN15 Wetland



AN15 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an16 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Very small PEM wetland within wetland disturbance. Upslope of a small spring feature.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an16 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Spiraea alba</u> | 15 | <input checked="" type="checkbox"/> 50.0% | FACW+ |
| 2. <u>Spiraea tomentosa</u> | 15 | <input checked="" type="checkbox"/> 50.0% | FACW |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 30 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Carex crinita</u> | 50 | <input checked="" type="checkbox"/> 60.2% | OBL |
| 2. <u>Scirpus cyperinus</u> | 5 | <input type="checkbox"/> 6.0% | FACW+ |
| 3. <u>Scirpus atrovirens</u> | 5 | <input type="checkbox"/> 6.0% | OBL |
| 4. <u>Onoclea sensibilis</u> | 20 | <input checked="" type="checkbox"/> 24.1% | FACW |
| 5. <u>Impatiens capensis</u> | 3 | <input type="checkbox"/> 3.6% | FACW |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 83 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>55</u> | x 1 = <u>55</u> |
| FACW species <u>58</u> | x 2 = <u>116</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>113</u> (A) | <u>171</u> (B) |
| Prevalence Index = B/A = <u>1.513</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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 wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|--|-----------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | | |
| 0-7 | 10YR | 3/2 | 100% | | | | | | | Loam | | |
| 7-16 | 2.5Y | 4/2 | 95% | 10YR | 4/6 | 5% | C | M | | Fine Sandy Loam | | |
| | | | | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: Sampling Point: an16 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 10.0 % / 5.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|--|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an16 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Fagus grandifolia</i> | 20 | <input checked="" type="checkbox"/> 66.7% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) |
| 2. <i>Betula papyrifera</i> | 10 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 30 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>106</u> x 4 = <u>424</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>191</u> (A) <u>839</u> (B) Prevalence Index = B/A = <u>4.393</u> |
| 1. <i>Pinus strobus</i> | 10 | <input type="checkbox"/> 19.6% | FACU | |
| 2. <i>Fagus grandifolia</i> | 33 | <input checked="" type="checkbox"/> 64.7% | FACU | |
| 3. <i>Viburnum lentago</i> | 5 | <input type="checkbox"/> 9.8% | FAC | |
| 4. <i>Picea rubens</i> | 3 | <input type="checkbox"/> 5.9% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 51 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <i>Rubus alumnus</i> | 10 | <input type="checkbox"/> 9.1% | FACU- | |
| 2. <i>Dennstaedtia punctilobula</i> | 80 | <input checked="" type="checkbox"/> 72.7% | UPL | |
| 3. <i>Acer saccharum</i> | 5 | <input type="checkbox"/> 4.5% | FACU- | |
| 4. <i>Solidago canadensis</i> | 15 | <input type="checkbox"/> 13.6% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 110 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

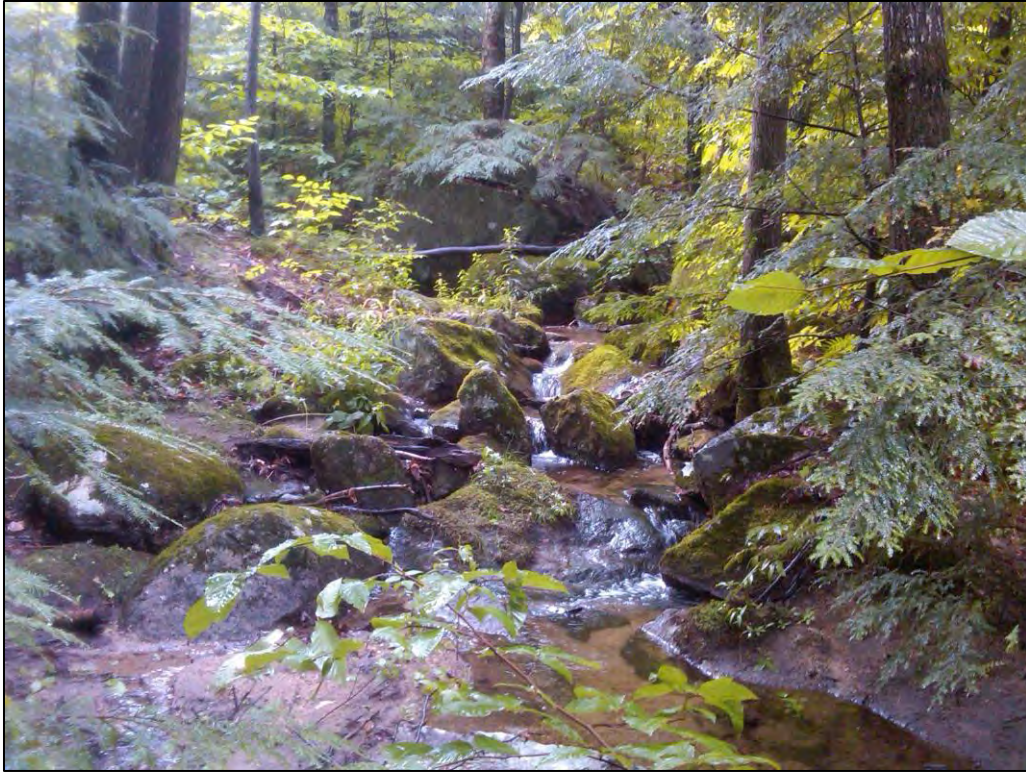
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AN16 Wetland



AN16 Wetland



AN17 Stream (associated with AN18 Wetland)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an18a wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Gulch or Gully Local relief (concave, convex, none): concave Slope: 12.0 % / 6.8 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS wetland entirely within ROW associated with stream AN17. Stream flowing with 4-6 inches of water.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|-------------------------------------------------------------------------------------------------|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 7 | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: an18a wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|---------------------|-------------------------------------------------|---------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 0 = Total Cover | | |
| 1. <u>Salix nigra</u> | 10 | <input checked="" type="checkbox"/> 76.9% FACW+ | |
| 2. <u>Fraxinus pennsylvanica</u> | 0 | <input type="checkbox"/> 0.0% FACW | |
| 3. <u>Cornus stolonifera</u> | 3 | <input checked="" type="checkbox"/> 23.1% FACW+ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 13 = Total Cover | | |
| 1. <u>Eupatoriadelphus dubius</u> | 0 | <input type="checkbox"/> 0.0% FACW | |
| 2. <u>Onoclea sensibilis</u> | 33 | <input checked="" type="checkbox"/> 38.4% FACW | |
| 3. <u>Scirpus cyperinus</u> | 8 | <input type="checkbox"/> 9.3% FACW+ | |
| 4. <u>Carex crinita</u> | 10 | <input type="checkbox"/> 11.6% OBL | |
| 5. <u>Osmunda cinnamomea</u> | 25 | <input checked="" type="checkbox"/> 29.1% FACW | |
| 6. <u>Carex lurida</u> | 10 | <input type="checkbox"/> 11.6% OBL | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 86 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>20</u> | x 1 = <u>20</u> |
| FACW species <u>79</u> | x 2 = <u>158</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>99</u> (A) | <u>178</u> (B) |
| Prevalence Index = B/A = <u>1.798</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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:

an18a wetland

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

| Depth (inches) | Matrix | | Redox Features | | | ¹ | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|------|--------------|------------------|---------------|----------------|
| | Color (moist) | % | Color (moist) | % | Type | | | | |
| 0-10 | 10YR | 3/2 | 100% | | | | | Sandy Loam | alluvial soils |
| 10-20 | 2.5Y | 4/1 | 100% | | | | | gravelly sand | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: _____

Depth (inches):_____

Hydric Soil Present?

Yes☒

No☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an18a upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 20.0 % / 11.3 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Maintained ROW

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an18a upland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|------------------------------------------|------------------|-------------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Herb Stratum (Plot size: 5' _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <i>Phalaris arundinacea</i> | 50 | <input checked="" type="checkbox"/> 46.3% FACW+ | |
| 2. <i>Dennstaedtia punctilobula</i> | 50 | <input checked="" type="checkbox"/> 46.3% UPL | |
| 3. <i>Solidago canadensis</i> | 8 | <input type="checkbox"/> 7.4% FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 108 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>50</u> | x 2 = <u>100</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>8</u> | x 4 = <u>32</u> |
| UPL species <u>50</u> | x 5 = <u>250</u> |
| Column Totals: <u>108</u> (A) | <u>382</u> (B) |
| Prevalence Index = B/A = <u>3.537</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN18a Wetland



AN18a Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an18b wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS wetland within skidder trail crossing stream AN17. Courdory matting over stream

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: an18b wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|---------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 0 = Total Cover | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>35</u> x 1 = <u>35</u> FACW species <u>148</u> x 2 = <u>296</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>183</u> (A) <u>331</u> (B) Prevalence Index = B/A = <u>1.809</u> |
| 1. <u>Spiraea tomentosa</u> | 33 <input checked="" type="checkbox"/> 68.8% FACW | | |
| 2. <u>Fraxinus pennsylvanica</u> | 15 <input checked="" type="checkbox"/> 31.3% FACW | | |
| 3. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 48 = Total Cover | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Onoclea sensibilis</u> | 20 <input type="checkbox"/> 14.8% FACW | | |
| 2. <u>Osmunda cinnamomea</u> | 5 <input type="checkbox"/> 3.7% FACW | | |
| 3. <u>Carex trisperma</u> | 15 <input type="checkbox"/> 11.1% OBL | | |
| 4. <u>Carex lurida</u> | 20 <input type="checkbox"/> 14.8% OBL | | |
| 5. <u>Rubus hispidus</u> | 50 <input checked="" type="checkbox"/> 37.0% FACW | | |
| 6. <u>Aster umbellatus</u> | 25 <input checked="" type="checkbox"/> 18.5% FACW | | |
| 7. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 <input type="checkbox"/> 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. |
| 9. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 135 = Total Cover | | |
| 1. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an18b upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|--|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an18b upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Fagus grandifolia</u> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B) |
| 2. <u>Tsuga canadensis</u> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU | |
| 3. <u>Abies balsamea</u> | 10 | <input type="checkbox"/> 16.7% | FAC | |
| 4. <u>Quercus rubra</u> | 0 | <input type="checkbox"/> 0.0% | FACU- | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 60 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 95 x 3 = 285 FACU species 113 x 4 = 452 UPL species 5 x 5 = 25 Column Totals: 213 (A) 762 (B) Prevalence Index = B/A = 3.577 |
| 1. <u>Betula alleghaniensis</u> | 25 | <input checked="" type="checkbox"/> 45.5% | FAC | |
| 2. <u>Acer saccharum</u> | 25 | <input checked="" type="checkbox"/> 45.5% | FACU- | |
| 3. <u>Pinus strobus</u> | 5 | <input type="checkbox"/> 9.1% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 55 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 33 | <input checked="" type="checkbox"/> 33.7% | FACU | |
| 2. <u>Thelypteris noveboracensis</u> | 60 | <input checked="" type="checkbox"/> 61.2% | FAC | |
| 3. <u>Polygonatum pubescens</u> | 5 | <input type="checkbox"/> 5.1% | UPL | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 98 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| 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.

[illegible]



AN18b Upland



AN18b Wetland



AN18 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

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, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 10.0 % / 5.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS/PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated skidder disturbed wetland adjacent to Stream AN17. Boulders throughout wetland.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN18c wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Acer rubrum</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FAC |
| 2. <u>Fraxinus pennsylvanica</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FACW |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Carex crinita</u> | 25 | <input checked="" type="checkbox"/> 28.1% | OBL |
| 2. <u>Phalaris arundinacea</u> | 33 | <input checked="" type="checkbox"/> 37.1% | FACW+ |
| 3. <u>Onoclea sensibilis</u> | 15 | <input type="checkbox"/> 16.9% | FACW |
| 4. <u>Carex lurida</u> | 8 | <input type="checkbox"/> 9.0% | OBL |
| 5. <u>Scirpus cyperinus</u> | 5 | <input type="checkbox"/> 5.6% | FACW+ |
| 6. <u>Carex trisperma</u> | 3 | <input type="checkbox"/> 3.4% | OBL |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 89 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>36</u> | x 1 = <u>36</u> |
| FACW species <u>58</u> | x 2 = <u>116</u> |
| FAC species <u>5</u> | x 3 = <u>15</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>99</u> (A) | <u>167</u> (B) |
| Prevalence Index = B/A = <u>1.687</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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: AN18c wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|-----|---|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | | | |
| 0-6 | 10YR | 3/2 | 100% | | | | | Fine Sandy Loam | | |
| 6-14 | 2.5Y | 4/1 | 90% | 10YR | 4/4 | 10% | C | M | Fine Sandy Loam | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: Boulders

Depth (inches): 14

Hydric Soil Present?

Yes☒

No☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18c upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

logged upland

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN18c upland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|------------------------------------------------|------------------|-------------------------------------|------------------|------------------|
| 1. <u>Acer rubrum</u> | 15 | <input checked="" type="checkbox"/> | 33.3% | FAC |
| 2. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> | 22.2% | FAC |
| 3. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> | 22.2% | FACU |
| 4. <u>Tsuga canadensis</u> | 10 | <input checked="" type="checkbox"/> | 22.2% | FACU |
| 5. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | | 45 | = Total Cover | |
| 1. <u>Acer pensylvanicum</u> | 20 | <input checked="" type="checkbox"/> | 44.4% | FACU |
| 2. <u>Quercus rubra</u> | 10 | <input checked="" type="checkbox"/> | 22.2% | FACU- |
| 3. <u>Fagus grandifolia</u> | 5 | <input type="checkbox"/> | 11.1% | FACU |
| 4. <u>Betula papyrifera</u> | 10 | <input checked="" type="checkbox"/> | 22.2% | FACU |
| 5. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| Herb Stratum (Plot size: 5') | | 45 | = Total Cover | |
| 1. <u>Dennstaedtia punctilobula</u> | 50 | <input checked="" type="checkbox"/> | 79.4% | UPL |
| 2. <u>Solidago canadensis</u> | 8 | <input type="checkbox"/> | 12.7% | FACU |
| 3. <u>Rubus alumnus</u> | 5 | <input type="checkbox"/> | 7.9% | FACU- |
| 4. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| Woody Vine Stratum (Plot size: _____) | | 63 | = Total Cover | |
| 1. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> | 0.0% | |
| | | 0 | = Total Cover | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

| | |
|--------------------------------|--------------------|
| Total % Cover of: | Multiply by: |
| OBL species 0 | x 1 = 0 |
| FACW species 0 | x 2 = 0 |
| FAC species 25 | x 3 = 75 |
| FACU species 78 | x 4 = 312 |
| UPL species 50 | x 5 = 250 |
| Column Totals: 153 | (A) 637 (B) |
| Prevalence Index = B/A = 4.163 | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN18c Wetland



AN18c Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18d wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS associated with Stream AN17

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN18d wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|------------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | |
| 1. <u>Fraxinus pennsylvanica</u> | 15 | <input checked="" type="checkbox"/> 60.0% FACW | |
| 2. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> 40.0% FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 25 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. <u>Onoclea sensibilis</u> | 80 | <input checked="" type="checkbox"/> 81.6% FACW | |
| 2. <u>Eupatoriadelphus dubius</u> | 5 | <input type="checkbox"/> 5.1% FACW | |
| 3. <u>Fraxinus pennsylvanica</u> | 3 | <input type="checkbox"/> 3.1% FACW | |
| 4. <u>Osmunda cinnamomea</u> | 10 | <input type="checkbox"/> 10.2% FACW | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 98 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>113</u> | x 2 = <u>226</u> |
| FAC species <u>10</u> | x 3 = <u>30</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>123</u> (A) | <u>256</u> (B) |
| Prevalence Index = B/A = <u>2.081</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an18d upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

logged upland

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an18d upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|-------------------------|-------------------------------------------|------------------|
| 1. <u>Tsuga canadensis</u> | 33 | <input checked="" type="checkbox"/> 43.4% | FACU |
| 2. <u>Populus tremula</u> | 10 | <input type="checkbox"/> 13.2% | FACU |
| 3. <u>Fraxinus pennsylvanica</u> | 33 | <input checked="" type="checkbox"/> 43.4% | FACW |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 76 = Total Cover | | |
| 1. <u>Acer rubrum</u> | 25 | <input checked="" type="checkbox"/> 33.3% | FAC |
| 2. <u>Fagus grandifolia</u> | 15 | <input checked="" type="checkbox"/> 20.0% | FACU |
| 3. <u>Pinus strobus</u> | 25 | <input checked="" type="checkbox"/> 33.3% | FACU |
| 4. <u>Betula papyrifera</u> | 10 | <input type="checkbox"/> 13.3% | FACU |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 75 = Total Cover | | |
| 1. <u>Solidago canadensis</u> | 8 | <input type="checkbox"/> 18.6% | FACU |
| 2. <u>Rubus alumnus</u> | 5 | <input type="checkbox"/> 11.6% | FACU- |
| 3. <u>Dennstaedtia punctilobula</u> | 25 | <input checked="" type="checkbox"/> 58.1% | UPL |
| 4. <u>Trientalis borealis</u> | 5 | <input type="checkbox"/> 11.6% | FAC |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 43 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

| | |
|--------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>33</u> | x 2 = <u>66</u> |
| FAC species <u>30</u> | x 3 = <u>90</u> |
| FACU species <u>106</u> | x 4 = <u>424</u> |
| UPL species <u>25</u> | x 5 = <u>125</u> |
| Column Totals: <u>194</u> (A) | <u>705</u> (B) |

Prevalence Index = B/A = 3.634

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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:

an18d upland

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

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

C=Concentration.

D=Depletion.

RM=Reduced Matrix,

CS=Covered or Coated Sand Grains

²Location:

PL=Pore Lining.M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)☐ Histic Epipedon (A2)☐ Black Histic (A3)☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5)☐ Depleted Below Dark Surface (A11)☐ Thick Dark Surface (A12)☐ Sandy Muck Mineral (S1)☐ Sandy Gleyed Matrix (S4)☐ Sandy Redox (S5)☐ Stripped Matrix (S6)☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)☐ Loamy Mucky Mineral (F1) LRR K, L)☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)☐ Coast Prairie Redox (A16) (LRR K, L, R)☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)☐ Dark Surface (S7) (LRR K, L)☐ Polyvalue Below Surface (S8) (LRR K, L)☐ Thin Dark Surface (S9) (LRR K, L)☐ Iron-Manganese Masses (F12) (LRR K, L, R)☐ Piedmont Floodplain Soils (F19) (MLRA 149B)☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)☐ Red Parent Material (TF2)☐ Very Shallow Dark Surface (TF12)☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Boulders

Depth (inches): 16

Hydric Soil Present?

Yes☐

No☒

Remarks:

Spodosol



AN18d Upland



AN18d Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18e Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave 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 time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO adjacent to Stream AN17.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|---|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN18e Wetland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|--------------------------------------------|------------------|
| 1. <i>Fraxinus pennsylvanica</i> | 15 | <input checked="" type="checkbox"/> 30.0% | FACW |
| 2. <i>Acer rubrum</i> | 20 | <input checked="" type="checkbox"/> 40.0% | FAC |
| 3. <i>Betula alleghaniensis</i> | 15 | <input checked="" type="checkbox"/> 30.0% | FAC |
| 4. | 0 | <input type="checkbox"/> 0.0% | |
| 5. | 0 | <input type="checkbox"/> 0.0% | |
| 6. | 0 | <input type="checkbox"/> 0.0% | |
| 7. | 0 | <input type="checkbox"/> 0.0% | |
| 50 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <i>Betula alleghaniensis</i> | 50 | <input checked="" type="checkbox"/> 100.0% | FAC |
| 2. | 0 | <input type="checkbox"/> 0.0% | |
| 3. | 0 | <input type="checkbox"/> 0.0% | |
| 4. | 0 | <input type="checkbox"/> 0.0% | |
| 5. | 0 | <input type="checkbox"/> 0.0% | |
| 6. | 0 | <input type="checkbox"/> 0.0% | |
| 7. | 0 | <input type="checkbox"/> 0.0% | |
| 50 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <i>Osmunda cinnamomea</i> | 33 | <input checked="" type="checkbox"/> 27.3% | FACW |
| 2. <i>Onoclea sensibilis</i> | 33 | <input checked="" type="checkbox"/> 27.3% | FACW |
| 3. <i>Eupatoriadelphus dubius</i> | 20 | <input type="checkbox"/> 16.5% | FACW |
| 4. <i>Impatiens capensis</i> | 20 | <input type="checkbox"/> 16.5% | FACW |
| 5. <i>Coptis trifolia</i> | 15 | <input type="checkbox"/> 12.4% | FACW |
| 6. | 0 | <input type="checkbox"/> 0.0% | |
| 7. | 0 | <input type="checkbox"/> 0.0% | |
| 8. | 0 | <input type="checkbox"/> 0.0% | |
| 9. | 0 | <input type="checkbox"/> 0.0% | |
| 10. | 0 | <input type="checkbox"/> 0.0% | |
| 11. | 0 | <input type="checkbox"/> 0.0% | |
| 12. | 0 | <input type="checkbox"/> 0.0% | |
| 121 = Total Cover | | | |
| Woody Vine Stratum (Plot size:) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. | 0 | <input type="checkbox"/> 0.0% | |
| 2. | 0 | <input type="checkbox"/> 0.0% | |
| 3. | 0 | <input type="checkbox"/> 0.0% | |
| 4. | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>136</u> | x 2 = <u>272</u> |
| FAC species <u>85</u> | x 3 = <u>255</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>221</u> (A) | <u>527</u> (B) |
| Prevalence Index = B/A = <u>2.385</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18e upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Very Bouldery.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN18e upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|------------------|-------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Fagus grandifolia</i> | 33 | <input checked="" type="checkbox"/> 43.4% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B) |
| 2. <i>Tsuga canadensis</i> | 33 | <input checked="" type="checkbox"/> 43.4% | FACU | |
| 3. <i>Betula papyrifera</i> | 10 | <input type="checkbox"/> 13.2% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | | 76 = Total Cover | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>141</u> x 4 = <u>564</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>171</u> (A) <u>654</u> (B) Prevalence Index = B/A = <u>3.825</u> |
| 1. <i>Fagus grandifolia</i> | 40 | <input checked="" type="checkbox"/> 53.3% | FACU | |
| 2. <i>Acer pensylvanicum</i> | 20 | <input checked="" type="checkbox"/> 26.7% | FACU | |
| 3. <i>Betula alleghaniensis</i> | 15 | <input checked="" type="checkbox"/> 20.0% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | | 75 = Total Cover | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <i>Thelypteris noveboracensis</i> | 15 | <input checked="" type="checkbox"/> 75.0% | FAC | |
| 2. <i>Quercus rubra</i> | 5 | <input checked="" type="checkbox"/> 25.0% | FACU- | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | | 20 = Total Cover | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | | 0 = Total Cover | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN18e Wetland



AN18e Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18f wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): convex Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO adjacent to Stream AN17. Drains through rock culvert and old ditching associated with old road bed.

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 4 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN18f wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Betula alleghaniensis</u> | 33 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: <u>5</u> (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 33 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Betula alleghaniensis</u> | 25 | <input checked="" type="checkbox"/> 55.6% | FAC | Total % Cover of: <u>0</u> Multiply by: <u>0</u> |
| 2. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 22.2% | FAC | OBL species <u>0</u> x 1 = <u>0</u> |
| 3. <u>Fraxinus pennsylvanica</u> | 10 | <input checked="" type="checkbox"/> 22.2% | FACW | FACW species <u>43</u> x 2 = <u>86</u> |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species <u>68</u> x 3 = <u>204</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>111</u> (A) <u>290</u> (B) |
| Herb Stratum (Plot size: 5') | 45 = Total Cover | | | Prevalence Index = B/A = <u>2.613</u> |
| 1. <u>Onoclea sensibilis</u> | 33 | <input checked="" type="checkbox"/> 100.0% | FACW | Hydrophytic Vegetation Indicators: |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 33 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|---------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-8 | 10YR | 3/2 | 100% | | | | | | Sandy Loam | |
| 8-16 | 2.5Y | 5/2 | 80% | 10YR | 4/6 | 20% | C | M | Gravelly Sand | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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☐

Remarks:

Alluvial Soils

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN18f Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): convex Slope: 10.0 % / 5.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN18f Upland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------|------------------|-------------------------------------|------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|--------------|----------|--------------|-----------|--------------|-----------|-------------|-----------|--------------|------------|--------------|-----------|--------------|------------|-------------|----------|--------------|-----------|-----------------------|------------|------------|----------------|
| 1. <u>Acer rubrum</u> | <u>40</u> | <input checked="" type="checkbox"/> | <u>50.0%</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>40</u> | <input checked="" type="checkbox"/> | <u>50.0%</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | 80 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">OBL species</td> <td style="width:10%; text-align: center;"><u>0</u></td> <td style="width:10%; text-align: center;">x 1 =</td> <td style="width:10%; text-align: center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>40</u></td> <td style="text-align: center;">x 2 =</td> <td style="text-align: center;"><u>80</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>70</u></td> <td style="text-align: center;">x 3 =</td> <td style="text-align: center;"><u>210</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>70</u></td> <td style="text-align: center;">x 4 =</td> <td style="text-align: center;"><u>280</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>5</u></td> <td style="text-align: center;">x 5 =</td> <td style="text-align: center;"><u>25</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>185</u></td> <td style="text-align: center;">(A)</td> <td style="text-align: center;"><u>595</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.216</u> | OBL species | <u>0</u> | x 1 = | <u>0</u> | FACW species | <u>40</u> | x 2 = | <u>80</u> | FAC species | <u>70</u> | x 3 = | <u>210</u> | FACU species | <u>70</u> | x 4 = | <u>280</u> | UPL species | <u>5</u> | x 5 = | <u>25</u> | Column Totals: | <u>185</u> | (A) | <u>595</u> (B) |
| OBL species | <u>0</u> | x 1 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | <u>40</u> | x 2 = | <u>80</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | <u>70</u> | x 3 = | <u>210</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | <u>70</u> | x 4 = | <u>280</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | <u>5</u> | x 5 = | <u>25</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | <u>185</u> | (A) | <u>595</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Ostrya virginiana</u> | <u>25</u> | <input checked="" type="checkbox"/> | <u>31.3%</u> | <u>FACU-</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Pinus strobus</u> | <u>10</u> | <input type="checkbox"/> | <u>12.5%</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Betula alleghaniensis</u> | <u>10</u> | <input type="checkbox"/> | <u>12.5%</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <u>Fagus grandifolia</u> | <u>15</u> | <input type="checkbox"/> | <u>18.8%</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. <u>Acer pensylvanicum</u> | <u>20</u> | <input checked="" type="checkbox"/> | <u>25.0%</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 5') | | 80 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Malanthemum canadense</u> | <u>20</u> | <input checked="" type="checkbox"/> | <u>80.0%</u> | <u>FAC-</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Polygonatum pubescens</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>20.0%</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: _____) | | 25 = Total Cover | | | 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. | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0 = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | | | | | | | | | | | | | | | | | | | | | | | | |

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

[illegible]



AN18f Wetland



AN18f Upland



AN18f Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an20 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) Isolated PEM entirely within ROW | |

Hydrology

| | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (minimum of 2 required) | |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 2 Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an20 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|------------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Herb Stratum (Plot size: 5' _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <i>Onoclea sensibilis</i> | 45 | <input checked="" type="checkbox"/> 39.8% | FACW |
| 2. <i>Impatiens capensis</i> | 10 | <input type="checkbox"/> 8.8% | FACW |
| 3. <i>Osmunda cinnamomea</i> | 33 | <input checked="" type="checkbox"/> 29.2% | FACW |
| 4. <i>Carex crinita</i> | 10 | <input type="checkbox"/> 8.8% | OBL |
| 5. <i>Phalaris arundinacea</i> | 15 | <input type="checkbox"/> 13.3% | FACW+ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 113 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>10</u> | x 1 = <u>10</u> |
| FACW species <u>103</u> | x 2 = <u>206</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>113</u> (A) | <u>216</u> (B) |
| Prevalence Index = B/A = <u>1.912</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an20 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Maintained ROW

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an20 upland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|--------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Rhus copallinum</u> | 25 | <input checked="" type="checkbox"/> 100.0% | NI |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 25 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Dennstaedtia punctilobula</u> | 95 | <input checked="" type="checkbox"/> 90.5% | UPL |
| 2. <u>Rubus alumnus</u> | 10 | <input type="checkbox"/> 9.5% | FACU- |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 105 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>0</u> | x 2 = <u>0</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>10</u> | x 4 = <u>40</u> |
| UPL species <u>95</u> | x 5 = <u>475</u> |
| Column Totals: <u>105</u> (A) | <u>515</u> (B) |
| Prevalence Index = B/A = <u>4.905</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN20 Wetland



AN20 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an21 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PEM entirely within ROW

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☒ No ☐ Depth (inches): 3

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: an21 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|---------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 0 = Total Cover | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>75</u> x 1 = <u>75</u> FACW species <u>44</u> x 2 = <u>88</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>124</u> (A) <u>178</u> (B) Prevalence Index = B/A = <u>1.435</u> |
| 1. <i>Spiraea tomentosa</i> | 5 <input checked="" type="checkbox"/> 33.3% FACW | | |
| 2. <i>Acer rubrum</i> | 5 <input checked="" type="checkbox"/> 33.3% FAC | | |
| 3. <i>Spiraea alba</i> | 5 <input checked="" type="checkbox"/> 33.3% FACW+ | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 15 = Total Cover | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <i>Osmunda cinnamomea</i> | 5 <input type="checkbox"/> 4.6% FACW | | |
| 2. <i>Scirpus cyperinus</i> | 8 <input type="checkbox"/> 7.3% FACW+ | | |
| 3. <i>Carex scoparia</i> | 1 <input type="checkbox"/> 0.9% FACW | | |
| 4. <i>Carex crinita</i> | 50 <input checked="" type="checkbox"/> 45.9% OBL | | |
| 5. <i>Onoclea sensibilis</i> | 20 <input type="checkbox"/> 18.3% FACW | | |
| 6. <i>Equisetum fluviatile</i> | 25 <input checked="" type="checkbox"/> 22.9% OBL | | |
| 7. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 109 = Total Cover | | 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. |
| 1. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 <input type="checkbox"/> 0.0% | | |
| _____ | 0 = Total Cover | | |
| _____ | | | |

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

Hydrophytic
Vegetation
Present? Yes ☒ No ☐

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

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 16-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an21 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 18.0 % / 10.2 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Maintained ROW

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an21 upland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Acer rubrum</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FAC |
| 2. <u>Gaylussacia baccata</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU |
| 3. <u>Acer saccharum</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU- |
| 4. <u>Fagus grandifolia</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU |
| 5. <u>Quercus rubra</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU- |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 25 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Dennstaedtia punctilobula</u> | 95 | <input checked="" type="checkbox"/> 89.6% | UPL |
| 2. <u>Trientalis borealis</u> | 3 | <input type="checkbox"/> 2.8% | FAC |
| 3. <u>Solidago canadensis</u> | 8 | <input type="checkbox"/> 7.5% | FACU |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 106 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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 <u>0</u> | x <u>1</u> = <u>0</u> |
| FACW species <u>0</u> | x <u>2</u> = <u>0</u> |
| FAC species <u>8</u> | x <u>3</u> = <u>24</u> |
| FACU species <u>28</u> | x <u>4</u> = <u>112</u> |
| UPL species <u>95</u> | x <u>5</u> = <u>475</u> |
| Column Totals: <u>131</u> (A) | <u>611</u> (B) |
| Prevalence Index = B/A = <u>4.664</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN21 Wetland



AN21 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an22 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS with moose wallow on southern end of wetland.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|---|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an22 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|------------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | |
| 1. <i>Fraxinus pennsylvanica</i> | 10 | <input checked="" type="checkbox"/> 20.8% FACW | |
| 2. <i>Acer rubrum</i> | 25 | <input checked="" type="checkbox"/> 52.1% FAC | |
| 3. <i>Spiraea tomentosa</i> | 5 | <input type="checkbox"/> 10.4% FACW | |
| 4. <i>Viburnum lentago</i> | 8 | <input type="checkbox"/> 16.7% FAC | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 48 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. <i>Onoclea sensibilis</i> | 25 | <input checked="" type="checkbox"/> 49.0% FACW | |
| 2. <i>Osmunda cinnamomea</i> | 15 | <input checked="" type="checkbox"/> 29.4% FACW | |
| 3. <i>Carex crinita</i> | 8 | <input type="checkbox"/> 15.7% OBL | |
| 4. <i>Equisetum arvense</i> | 3 | <input type="checkbox"/> 5.9% FAC | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 51 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>8</u> | x 1 = <u>8</u> |
| FACW species <u>55</u> | x 2 = <u>110</u> |
| FAC species <u>36</u> | x 3 = <u>108</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>99</u> (A) | <u>226</u> (B) |
| Prevalence Index = B/A = <u>2.283</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN22 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 12.0 % / 6.8 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5) | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Field Observations:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> <div style="width: 45%;"> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> </div> </div> </div> <div style="width: 45%;"> <p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> </div> | | | |
| <p>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</p> <div style="height: 40px; border: 1px solid black; margin-top: 5px;"></div> | | | |
| <p>Remarks:</p> <div style="height: 150px; border: 1px solid black; margin-top: 5px;"></div> | | | |

VEGETATION - Use scientific names of plants

Sampling Point: AN22 Upland

| Tree Stratum (Plot size: 30') | | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|----------------------------------------|----|-------------------------------------|------------------------------------|------------------|
| 1. <i>Tsuga canadensis</i> | 20 | <input checked="" type="checkbox"/> | 33.3% | FACU |
| 2. <i>Betula papyrifera</i> | 10 | <input type="checkbox"/> | 16.7% | FACU |
| 3. <i>Fagus grandifolia</i> | 20 | <input checked="" type="checkbox"/> | 33.3% | FACU |
| 4. <i>Acer rubrum</i> | 10 | <input type="checkbox"/> | 16.7% | FAC |
| 5. | 0 | <input type="checkbox"/> | 0.0% | |
| 6. | 0 | <input type="checkbox"/> | 0.0% | |
| 7. | 0 | <input type="checkbox"/> | 0.0% | |
| 60 = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <i>Betula alleghaniensis</i> | 25 | <input checked="" type="checkbox"/> | 50.0% | FAC |
| 2. <i>Acer pensylvanicum</i> | 15 | <input checked="" type="checkbox"/> | 30.0% | FACU |
| 3. <i>Fagus grandifolia</i> | 10 | <input checked="" type="checkbox"/> | 20.0% | FACU |
| 4. | 0 | <input type="checkbox"/> | 0.0% | |
| 5. | 0 | <input type="checkbox"/> | 0.0% | |
| 6. | 0 | <input type="checkbox"/> | 0.0% | |
| 7. | 0 | <input type="checkbox"/> | 0.0% | |
| 50 = Total Cover | | | | |
| Herb Stratum (Plot size: 5') | | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <i>Trientalis borealis</i> | 10 | <input type="checkbox"/> | 11.0% | FAC |
| 2. <i>Dennstaedtia punctilobula</i> | 66 | <input checked="" type="checkbox"/> | 72.5% | UPL |
| 3. <i>Aralia nudicaulis</i> | 15 | <input type="checkbox"/> | 16.5% | FACU |
| 4. | 0 | <input type="checkbox"/> | 0.0% | |
| 5. | 0 | <input type="checkbox"/> | 0.0% | |
| 6. | 0 | <input type="checkbox"/> | 0.0% | |
| 7. | 0 | <input type="checkbox"/> | 0.0% | |
| 8. | 0 | <input type="checkbox"/> | 0.0% | |
| 9. | 0 | <input type="checkbox"/> | 0.0% | |
| 10. | 0 | <input type="checkbox"/> | 0.0% | |
| 11. | 0 | <input type="checkbox"/> | 0.0% | |
| 12. | 0 | <input type="checkbox"/> | 0.0% | |
| 91 = Total Cover | | | | |
| Woody Vine Stratum (Plot size:) | | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. | 0 | <input type="checkbox"/> | 0.0% | |
| 2. | 0 | <input type="checkbox"/> | 0.0% | |
| 3. | 0 | <input type="checkbox"/> | 0.0% | |
| 4. | 0 | <input type="checkbox"/> | 0.0% | |
| 0 = Total Cover | | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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 45 | x 3 = 135 |
| FACU species 90 | x 4 = 360 |
| UPL species 66 | x 5 = 330 |
| Column Totals: 201 (A) | 825 (B) |

Prevalence Index = B/A = 4.104

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN22 Wetland



AN22 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN23 Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 12.0 % / 6.8 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO/PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO/PSS hillside seep disturbed by Skidder activity.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

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): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN23 Wetland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|
| 1. <u>Fraxinus pennsylvanica</u> | 33 | <input checked="" type="checkbox"/> 40.7% | FACW |
| 2. <u>Acer rubrum</u> | 33 | <input checked="" type="checkbox"/> 40.7% | FAC |
| 3. <u>Betula alleghaniensis</u> | 15 | <input type="checkbox"/> 18.5% | FAC |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 81 = Total Cover | | |
| 1. <u>Fraxinus pennsylvanica</u> | 8 | <input checked="" type="checkbox"/> 28.6% | FACW |
| 2. <u>Spiraea tomentosa</u> | 15 | <input checked="" type="checkbox"/> 53.6% | FACW |
| 3. <u>Pinus strobus</u> | 5 | <input type="checkbox"/> 17.9% | FACU |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 28 = Total Cover | | |
| 1. <u>Onoclea sensibilis</u> | 75 | <input checked="" type="checkbox"/> 78.1% | FACW |
| 2. <u>Osmunda cinnamomea</u> | 8 | <input type="checkbox"/> 8.3% | FACW |
| 3. <u>Equisetum arvense</u> | 8 | <input type="checkbox"/> 8.3% | FAC |
| 4. <u>Carex lurida</u> | 5 | <input type="checkbox"/> 5.2% | OBL |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 96 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>5</u> | x 1 = <u>5</u> |
| FACW species <u>139</u> | x 2 = <u>278</u> |
| FAC species <u>56</u> | x 3 = <u>168</u> |
| FACU species <u>5</u> | x 4 = <u>20</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>205</u> (A) | <u>471</u> (B) |
| Prevalence Index = B/A = <u>2.298</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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: AN23 Wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|--|------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-7 | 10YR | 3/2 | 100% | | | | | | Loam | | |
| 7-15 | 2.5Y | 4/1 | 100% | | | | | | Sandy Loam | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: stony

Depth (inches): 15

Hydric Soil Present? Yes No

Remarks:

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 17-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an23 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5) | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Field Observations:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> <div style="width: 45%;"> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> </div> </div> </div> <div style="width: 45%;"> <p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> </div> | | | |
| <p>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</p> <div style="height: 40px; border: 1px solid black; margin-top: 5px;"></div> | | | |
| <p>Remarks:</p> <div style="height: 150px; border: 1px solid black; margin-top: 5px;"></div> | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an23 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Quercus rubra</u> | 25 | <input checked="" type="checkbox"/> 29.4% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B) |
| 2. <u>Fagus grandifolia</u> | 25 | <input checked="" type="checkbox"/> 29.4% | FACU | |
| 3. <u>Betula alleghaniensis</u> | 25 | <input checked="" type="checkbox"/> 29.4% | FAC | |
| 4. <u>Tsuga canadensis</u> | 10 | <input type="checkbox"/> 11.8% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 85 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>0</u> x <u>2</u> = <u>0</u> FAC species <u>50</u> x <u>3</u> = <u>150</u> FACU species <u>113</u> x <u>4</u> = <u>452</u> UPL species <u>3</u> x <u>5</u> = <u>15</u> Column Totals: <u>166</u> (A) <u>617</u> (B) Prevalence Index = B/A = <u>3.717</u> |
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 50.0% | FAC | |
| 2. <u>Pinus strobus</u> | 10 | <input checked="" type="checkbox"/> 25.0% | FACU | |
| 3. <u>Fraxinus americana</u> | 5 | <input type="checkbox"/> 12.5% | FACU | |
| 4. <u>Quercus rubra</u> | 5 | <input type="checkbox"/> 12.5% | FACU- | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 40 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 33 | <input checked="" type="checkbox"/> 80.5% | FACU | |
| 2. <u>Trientalis borealis</u> | 5 | <input type="checkbox"/> 12.2% | FAC | |
| 3. <u>Polygonatum pubescens</u> | 3 | <input type="checkbox"/> 7.3% | UPL | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 41 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 0 = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN23 Upland



AN23 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN24 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO with ATV trail through west side of wetland. Contains VP-5.

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 2 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

Sphagnum 50% cover.

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN24 wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 33 | <input checked="" type="checkbox"/> 76.7% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> 23.3% | FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 43 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>58</u> x 3 = <u>174</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>93</u> (A) <u>244</u> (B) Prevalence Index = B/A = <u>2.624</u> |
| 1. <u>Hamamelis virginiana</u> | 10 | <input checked="" type="checkbox"/> 66.7% | FAC- | |
| 2. <u>Betula alleghaniensis</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 15 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Osmunda cinnamomea</u> | 25 | <input checked="" type="checkbox"/> 71.4% | FACW | |
| 2. <u>Rubus hispidus</u> | 10 | <input checked="" type="checkbox"/> 28.6% | FACW | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 35 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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:

AN24 wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|--|----------------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-8 | 10YR | 2/1 | 100% | | | | | | Muck | sapri c | |
| 8-12 | 10YR | 2/1 | 100% | | | | | | Very Fine Sandy Loam | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☒ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Refusal

Depth (inches): 12

Hydric Soil Present?

Yes☒

No☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN24 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN24 Upland**

| Tree Stratum (Plot size: 30') | | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|------------------------------|------------------|-------------------------------------------|------------------|
| 1. | <u>Picea rubens</u> | 10 | <input type="checkbox"/> 16.7% | FACU |
| 2. | <u>Tsuga canadensis</u> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU |
| 3. | <u>Betula papyrifera</u> | 10 | <input type="checkbox"/> 16.7% | FACU |
| 4. | <u>Quercus rubra</u> | 15 | <input checked="" type="checkbox"/> 25.0% | FACU- |
| 5. | | 0 | <input type="checkbox"/> 0.0% | |
| 6. | | 0 | <input type="checkbox"/> 0.0% | |
| 7. | | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | | 60 = Total Cover | | |
| 1. | <u>Fagus grandifolia</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU |
| 2. | <u>Picea rubens</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU |
| 3. | <u>Hamamelis virginiana</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FAC- |
| 4. | <u>Viburnum lentago</u> | 10 | <input checked="" type="checkbox"/> 40.0% | FAC |
| 5. | | 0 | <input type="checkbox"/> 0.0% | |
| 6. | | 0 | <input type="checkbox"/> 0.0% | |
| 7. | | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | | 25 = Total Cover | | |
| 1. | <u>Aralia nudicaulis</u> | 8 | <input checked="" type="checkbox"/> 36.4% | FACU |
| 2. | <u>Lycopodium obscurum</u> | 3 | <input type="checkbox"/> 13.6% | FACU |
| 3. | <u>Pteridium aquilinum</u> | 3 | <input type="checkbox"/> 13.6% | FACU |
| 4. | <u>Polygonatum pubescens</u> | 5 | <input checked="" type="checkbox"/> 22.7% | UPL |
| 5. | <u>Trillalis borealis</u> | 3 | <input type="checkbox"/> 13.6% | FAC |
| 6. | | 0 | <input type="checkbox"/> 0.0% | |
| 7. | | 0 | <input type="checkbox"/> 0.0% | |
| 8. | | 0 | <input type="checkbox"/> 0.0% | |
| 9. | | 0 | <input type="checkbox"/> 0.0% | |
| 10. | | 0 | <input type="checkbox"/> 0.0% | |
| 11. | | 0 | <input type="checkbox"/> 0.0% | |
| 12. | | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size:) | | 22 = Total Cover | | |
| 1. | | 0 | <input type="checkbox"/> 0.0% | |
| 2. | | 0 | <input type="checkbox"/> 0.0% | |
| 3. | | 0 | <input type="checkbox"/> 0.0% | |
| 4. | | 0 | <input type="checkbox"/> 0.0% | |
| | | 0 = Total Cover | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>0</u> | x 2 = <u>0</u> |
| FAC species <u>18</u> | x 3 = <u>54</u> |
| FACU species <u>84</u> | x 4 = <u>336</u> |
| UPL species <u>5</u> | x 5 = <u>25</u> |
| Column Totals: <u>107</u> (A) | <u>415</u> (B) |
| Prevalence Index = B/A = <u>3.879</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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: AN24 Upland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|--|-----------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-4 | 10YR | 3/2 | 100% | | | | | | Loam | | |
| 4-8 | 10YR | 4/3 | 100% | | | | | | Fine Sandy Loam | | |
| 8-10 | 10YR | 5/8 | 100% | | | | | | Fine Sandy Loam | | |
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¹ Type:

C=Concentration.

D=Depletion.

RM=Reduced Matrix,

CS=Covered or Coated Sand Grains

² Location:

PL=Pore Lining.

M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)☐ Histic Epipedon (A2)☐ Black Histic (A3)☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5)☐ Depleted Below Dark Surface (A11)☐ Thick Dark Surface (A12)☐ Sandy Muck Mineral (S1)☐ Sandy Gleyed Matrix (S4)☐ Sandy Redox (S5)☐ Stripped Matrix (S6)☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)☐ Loamy Mucky Mineral (F1) LRR K, L)☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)☐ Coast Prairie Redox (A16) (LRR K, L, R)☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)☐ Dark Surface (S7) (LRR K, L)☐ Polyvalue Below Surface (S8) (LRR K, L)☐ Thin Dark Surface (S9) (LRR K, L)☐ Iron-Manganese Masses (F12) (LRR K, L, R)☐ Piedmont Floodplain Soils (F19) (MLRA 149B)☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)☐ Red Parent Material (TF2)☐ Very Shallow Dark Surface (TF12)☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Refusal

Depth (inches):

10

Hydric Soil Present?

Yes☐

No☒

Remarks:



AN24 Wetland



AN24 Upland



AN24 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN25 Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO in pocket of ledge. Contains VP-4. Adjacent to ATV trail.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input checked="" type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 6 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

Contained up to 2 feet of standing water in May.

VEGETATION - Use scientific names of plants

Sampling Point: **AN25 Wetland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
|-----------------------------------------------|------------------|-------------------------------------|------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | <u>50</u> | <input checked="" type="checkbox"/> | <u>100.0%</u> | <u>FAC</u> | |
| 2. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | <u>50</u> | = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>21</u> x 2 = <u>42</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>76</u> (A) <u>197</u> (B) Prevalence Index = B/A = <u>2.592</u> |
| 1. <u>Ilex verticillata</u> | <u>3</u> | <input checked="" type="checkbox"/> | <u>100.0%</u> | <u>FACW+</u> | |
| 2. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Herb Stratum (Plot size: 5') | <u>3</u> | = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Osmunda regalis</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>21.7%</u> | <u>OBL</u> | |
| 2. <u>Scirpus cyperinus</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>43.5%</u> | <u>FACW+</u> | |
| 3. <u>Osmunda cinnamomea</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>21.7%</u> | <u>FACW</u> | |
| 4. <u>Carex Intumescens</u> | <u>3</u> | <input type="checkbox"/> | <u>13.0%</u> | <u>FACW+</u> | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 8. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 9. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 10. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 11. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 12. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Woody Vine Stratum (Plot size: _____) | <u>23</u> | = Total Cover | | | 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. |
| 1. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 2. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| | <u>0</u> | = Total Cover | | | |

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Soil

Sampling Point: AN25 Wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-8 | 10YR | 2/1 | | | | | | | Muck | |
| 8-16 | 2.5Y | 5/1 | 70% | 10YR | 5/6 | 25% | C | M | Fine Loamy Sand | |
| | | | | 2.5Y | 6/1 | 5% | D | M | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☒ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN25 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): convex Slope: 20.0 % / 11.3 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

ATV trail nearby

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN25 upland

| Tree Stratum | (Plot size: 30') | Absolute % Cover | Species? Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|------------------|------------------|-------------------------------------------|------------------|
| 1. Picea rubens | | 15 | <input type="checkbox"/> 14.2% | FACU |
| 2. Tsuga canadensis | | 25 | <input checked="" type="checkbox"/> 23.6% | FACU |
| 3. Quercus rubra | | 66 | <input checked="" type="checkbox"/> 62.3% | FACU- |
| 4. | | 0 | <input type="checkbox"/> 0.0% | |
| 5. | | 0 | <input type="checkbox"/> 0.0% | |
| 6. | | 0 | <input type="checkbox"/> 0.0% | |
| 7. | | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | | 106 | = Total Cover | |
| 1. Picea rubens | | 10 | <input checked="" type="checkbox"/> 33.3% | FACU |
| 2. Fagus grandifolia | | 15 | <input checked="" type="checkbox"/> 50.0% | FACU |
| 3. Tsuga canadensis | | 5 | <input type="checkbox"/> 16.7% | FACU |
| 4. | | 0 | <input type="checkbox"/> 0.0% | |
| 5. | | 0 | <input type="checkbox"/> 0.0% | |
| 6. | | 0 | <input type="checkbox"/> 0.0% | |
| 7. | | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | | 30 | = Total Cover | |
| 1. Malanthemum canadense | | 10 | <input type="checkbox"/> 9.5% | FAC- |
| 2. Pteridium aquilinum | | 50 | <input checked="" type="checkbox"/> 47.6% | FACU |
| 3. Medeola virginiana | | 5 | <input type="checkbox"/> 4.8% | UPL |
| 4. Gaultheria procumbens | | 15 | <input checked="" type="checkbox"/> 14.3% | FACU |
| 5. Polygonatum pubescens | | 5 | <input type="checkbox"/> 4.8% | UPL |
| 6. Cornus canadensis | | 5 | <input type="checkbox"/> 4.8% | FAC- |
| 7. Aralia nudicaulis | | 15 | <input checked="" type="checkbox"/> 14.3% | FACU |
| 8. | | 0 | <input type="checkbox"/> 0.0% | |
| 9. | | 0 | <input type="checkbox"/> 0.0% | |
| 10. | | 0 | <input type="checkbox"/> 0.0% | |
| 11. | | 0 | <input type="checkbox"/> 0.0% | |
| 12. | | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size:) | | 105 | = Total Cover | |
| 1. | | 0 | <input type="checkbox"/> 0.0% | |
| 2. | | 0 | <input type="checkbox"/> 0.0% | |
| 3. | | 0 | <input type="checkbox"/> 0.0% | |
| 4. | | 0 | <input type="checkbox"/> 0.0% | |
| | | 0 | = Total Cover | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

| | |
|--------------------------------|--------------|
| Total % Cover of: | Multiply by: |
| OBL species 0 | x 1 = 0 |
| FACW species 0 | x 2 = 0 |
| FAC species 15 | x 3 = 45 |
| FACU species 216 | x 4 = 864 |
| UPL species 10 | x 5 = 50 |
| Column Totals: 241 | (A) 959 (B) |
| Prevalence Index = B/A = 3.979 | |

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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:

AN25 upland

Profile Description:

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|--|-----------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-5 | 10YR | 2/1 | 100% | | | | | | Loam | | |
| 5-6 | 2.5Y | 5/1 | 100% | | | | | | Fine Loamy Sand | | |
| 6-16 | 5YR | 4/4 | 100% | | | | | | Sandy Loam | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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☒

Remarks:

Spodosol



AN25 Wetland



AN25 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN26 Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Wetland within saddle continues off site.

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 2 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN26 Wetland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
|------------------------------------------------|------------------|-------------------------------------|------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | <u>20</u> | <input checked="" type="checkbox"/> | <u>57.1%</u> | <u>FAC</u> | |
| 2. <u>Betula alleghaniensis</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>42.9%</u> | <u>FAC</u> | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | | 35 = Total Cover | | | |
| 1. <u>Fraxinus pennsylvanica</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>25.0%</u> | <u>FACW</u> | |
| 2. <u>Acer rubrum</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>50.0%</u> | <u>FAC</u> | |
| 3. <u>Picea mariana</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>25.0%</u> | <u>FACW-</u> | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 5. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Herb Stratum (Plot size: 5') | | 20 = Total Cover | | | |
| 1. <u>Onoclea sensibilis</u> | <u>8</u> | <input type="checkbox"/> | <u>14.3%</u> | <u>FACW</u> | |
| 2. <u>Osmunda claytoniana</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>26.8%</u> | <u>FAC</u> | |
| 3. <u>Osmunda regalis</u> | <u>3</u> | <input type="checkbox"/> | <u>5.4%</u> | <u>OBL</u> | |
| 4. <u>Impatiens capensis</u> | <u>20</u> | <input checked="" type="checkbox"/> | <u>35.7%</u> | <u>FACW</u> | |
| 5. <u>Coptis trifolia</u> | <u>10</u> | <input type="checkbox"/> | <u>17.9%</u> | <u>FACW</u> | |
| 6. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 7. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 8. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 9. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 10. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 11. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 12. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| Woody Vine Stratum (Plot size: _____) | | 56 = Total Cover | | | |
| 1. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 2. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 3. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| 4. _____ | <u>0</u> | <input type="checkbox"/> | <u>0.0%</u> | _____ | |
| | | 0 = Total Cover | | | |

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>3</u> | x 1 = <u>3</u> |
| FACW species <u>48</u> | x 2 = <u>96</u> |
| FAC species <u>60</u> | x 3 = <u>180</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>111</u> (A) | <u>279</u> (B) |
| Prevalence Index = B/A = <u>2.514</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN26 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): flat Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN26 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|------------------|-------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Fagus grandifolia</i> | 15 | <input type="checkbox"/> 16.7% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) |
| 2. <i>Picea rubens</i> | 50 | <input checked="" type="checkbox"/> 55.6% | FACU | |
| 3. <i>Betula papyrifera</i> | 15 | <input type="checkbox"/> 16.7% | FACU | |
| 4. <i>Betula alleghaniensis</i> | 10 | <input type="checkbox"/> 11.1% | FAC | |
| 5. | 0 | <input type="checkbox"/> 0.0% | | |
| 6. | 0 | <input type="checkbox"/> 0.0% | | |
| 7. | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 90 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>0</u> x <u>2</u> = <u>0</u> FAC species <u>14</u> x <u>3</u> = <u>42</u> FACU species <u>143</u> x <u>4</u> = <u>572</u> UPL species <u>5</u> x <u>5</u> = <u>25</u> Column Totals: <u>162</u> (A) <u>639</u> (B) Prevalence Index = B/A = <u>3.944</u> |
| 1. <i>Fagus grandifolia</i> | 10 | <input checked="" type="checkbox"/> 23.3% | FACU | |
| 2. <i>Acer pensylvanicum</i> | 33 | <input checked="" type="checkbox"/> 76.7% | FACU | |
| 3. | 0 | <input type="checkbox"/> 0.0% | | |
| 4. | 0 | <input type="checkbox"/> 0.0% | | |
| 5. | 0 | <input type="checkbox"/> 0.0% | | |
| 6. | 0 | <input type="checkbox"/> 0.0% | | |
| 7. | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 43 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <i>Aralia nudicaulis</i> | 20 | <input checked="" type="checkbox"/> 69.0% | FACU | |
| 2. <i>Malanthemum canadense</i> | 3 | <input type="checkbox"/> 10.3% | FAC- | |
| 3. <i>Trientalis borealis</i> | 1 | <input type="checkbox"/> 3.4% | FAC | |
| 4. <i>Polygonatum pubescens</i> | 5 | <input type="checkbox"/> 17.2% | UPL | |
| 5. | 0 | <input type="checkbox"/> 0.0% | | |
| 6. | 0 | <input type="checkbox"/> 0.0% | | |
| 7. | 0 | <input type="checkbox"/> 0.0% | | |
| 8. | 0 | <input type="checkbox"/> 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. |
| 9. | 0 | <input type="checkbox"/> 0.0% | | |
| 10. | 0 | <input type="checkbox"/> 0.0% | | |
| 11. | 0 | <input type="checkbox"/> 0.0% | | |
| 12. | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size:) | 29 = Total Cover | | | |
| 1. | 0 | <input type="checkbox"/> 0.0% | | |
| 2. | 0 | <input type="checkbox"/> 0.0% | | |
| 3. | 0 | <input type="checkbox"/> 0.0% | | |
| 4. | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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: AN26 upland

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

| Depth (inches) | Matrix | | Redox Features | | | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | |
| 0-5 | 10YR | 3/2 | 100% | | | | Loam | |
| 5-16 | 10YR | 4/6 | 100% | | | | Fine Sandy Loam | |
| | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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 ☒

Remarks:



AN26 Wetland



AN26 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN27 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Saddle Local relief (concave, convex, none): undulating Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|------------------------------------------------------------------------------------------|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 1 | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN27 wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|-------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Picea mariana</u> | 50 | <input checked="" type="checkbox"/> 45.5% | FACW- | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. <u>Acer rubrum</u> | 50 | <input checked="" type="checkbox"/> 45.5% | FAC | Total Number of Dominant Species Across All Strata: <u>5</u> (B) |
| 3. <u>Betula alleghaniensis</u> | 10 | <input type="checkbox"/> 9.1% | FAC | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 110 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Betula alleghaniensis</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FAC | Total % Cover of: <u>0</u> Multiply by: <u>0</u> |
| 2. <u>Picea mariana</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FACW- | OBL species <u>0</u> x 1 = <u>0</u> |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | FACW species <u>105</u> x 2 = <u>210</u> |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species <u>65</u> x 3 = <u>195</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>170</u> (A) <u>405</u> (B) |
| Herb Stratum (Plot size: 5') | 10 = Total Cover | | | Prevalence Index = B/A = <u>2.382</u> |
| 1. <u>Osmunda cinnamomea</u> | 50 | <input checked="" type="checkbox"/> 100.0% | FACW | Hydrophytic Vegetation Indicators: |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 50 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 18-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN27 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope: 20.0 % / 11.3 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN27 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------------------------------------|------------------|--------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Fagus grandifolia</u> | 20 | <input checked="" type="checkbox"/> 28.6% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>14.3%</u> (A/B) |
| 2. <u>Quercus rubra</u> | 15 | <input checked="" type="checkbox"/> 21.4% | FACU- | |
| 3. <u>Betula papyrifera</u> | 20 | <input checked="" type="checkbox"/> 28.6% | FACU | |
| 4. <u>Picea rubens</u> | 15 | <input checked="" type="checkbox"/> 21.4% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 70 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 2 x 3 = 6 FACU species 95 x 4 = 380 UPL species 0 x 5 = 0 Column Totals: 97 (A) 386 (B) Prevalence Index = B/A = 3.979 |
| 1. <u>Fagus grandifolia</u> | 20 | <input checked="" type="checkbox"/> 80.0% | FACU | |
| 2. <u>Betula papyrifera</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 25 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Acer rubrum</u> | 2 | <input checked="" type="checkbox"/> 100.0% | FAC | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 2 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| 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.

[illegible]



AN27 Upland



AN27 Wetland



AN27 Wetland



AN27 Wetland



AN27 Wetland



AN27 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN30 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): concave Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO with ephemeral inlet and outlet towards intermittent stream AN29.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: AN30 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: | |
|----------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | Number of Dominant Species That are OBL, FACW, or FAC: | 3 (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: | 4 (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: | 75.0% (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| Sapling/Shrub Stratum (Plot size: 15') | | | 0 = Total Cover | Prevalence Index worksheet: | |
| 1. <u>Betula alleghaniensis</u> | 10 | <input checked="" type="checkbox"/> 50.0% | FAC | Total % Cover of: | Multiply by: |
| 2. <u>Fraxinus pennsylvanica</u> | 10 | <input checked="" type="checkbox"/> 50.0% | FACW | OBL species | 0 x 1 = 0 |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | FACW species | 35 x 2 = 70 |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species | 10 x 3 = 30 |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species | 0 x 4 = 0 |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species | 25 x 5 = 125 |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: | 70 (A) 225 (B) |
| Herb Stratum (Plot size: 5') | | | 20 = Total Cover | Prevalence Index = B/A = 3.214 | |
| 1. <u>Onoclea sensibilis</u> | 25 | <input checked="" type="checkbox"/> 50.0% | FACW | Hydrophytic Vegetation Indicators: | |
| 2. <u>Polygonatum pubescens</u> | 25 | <input checked="" type="checkbox"/> 50.0% | UPL | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Dominance Test is > 50% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. | |
| Woody Vine Stratum (Plot size: _____) | | | 50 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| | | | 0 = Total Cover | | |

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

Hydrophytic
Vegetation
Present? Yes ☒ No ☐

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

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN30 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------|
| Field Observations: | | | |
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): <u> </u> | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): <u> </u> | |
| Saturation Present? (includes capillary fringe) | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): <u> </u> | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN30 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|------------------|-------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Tsuga canadensis</i> | 25 | <input checked="" type="checkbox"/> 31.3% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>12.5%</u> (A/B) |
| 2. <i>Quercus rubra</i> | 15 | <input type="checkbox"/> 18.8% | FACU- | |
| 3. <i>Acer saccharum</i> | 25 | <input checked="" type="checkbox"/> 31.3% | FACU- | |
| 4. <i>Betula alleghaniensis</i> | 15 | <input type="checkbox"/> 18.8% | FAC | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 80 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>0</u> x <u>2</u> = <u>0</u> FAC species <u>30</u> x <u>3</u> = <u>90</u> FACU species <u>109</u> x <u>4</u> = <u>436</u> UPL species <u>0</u> x <u>5</u> = <u>0</u> Column Totals: <u>139</u> (A) <u>526</u> (B) Prevalence Index = B/A = <u>3.784</u> |
| 1. <i>Fagus grandifolia</i> | 10 | <input checked="" type="checkbox"/> 40.0% | FACU | |
| 2. <i>Pinus strobus</i> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU | |
| 3. <i>Quercus rubra</i> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU- | |
| 4. <i>Acer pensylvanicum</i> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 25 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 <input type="radio"/> No <input checked="" type="radio"/> |
| 1. <i>Malanthemum canadense</i> | 10 | <input checked="" type="checkbox"/> 29.4% | FAC- | |
| 2. <i>Aralia nudicaulis</i> | 15 | <input checked="" type="checkbox"/> 44.1% | FACU | |
| 3. <i>Tsuga canadensis</i> | 3 | <input type="checkbox"/> 8.8% | FACU | |
| 4. <i>Lycopodium obscurum</i> | 1 | <input type="checkbox"/> 2.9% | FACU | |
| 5. <i>Trileta borealis</i> | 5 | <input type="checkbox"/> 14.7% | FAC | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 34 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| | 0 = Total Cover | | | |

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.

[illegible]



AN30 Wetland



AN30 Upland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN31 Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 2.0 % / 1.1 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS wetland entirely within maintained transmission line ROW.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|-------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 2 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN31 Wetland**

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 25.0% | FAC |
| 2. <u>Lyonia ligustrina</u> | 5 | <input type="checkbox"/> 12.5% | FACW |
| 3. <u>Spiraea alba</u> | 25 | <input checked="" type="checkbox"/> 62.5% | FACW+ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 40 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <u>Scirpus cyperinus</u> | 8 | <input type="checkbox"/> 8.8% | FACW+ |
| 2. <u>Onoclea sensibilis</u> | 25 | <input checked="" type="checkbox"/> 27.5% | FACW |
| 3. <u>Carex crinita</u> | 5 | <input type="checkbox"/> 5.5% | OBL |
| 4. <u>Carex lurida</u> | 5 | <input type="checkbox"/> 5.5% | OBL |
| 5. <u>Scirpus atrovirens</u> | 8 | <input type="checkbox"/> 8.8% | OBL |
| 6. <u>Solidago canadensis</u> | 15 | <input type="checkbox"/> 16.5% | FACU |
| 7. <u>Rubus hispidus</u> | 25 | <input checked="" type="checkbox"/> 27.5% | FACW |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 91 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>18</u> | x 1 = <u>18</u> |
| FACW species <u>88</u> | x 2 = <u>176</u> |
| FAC species <u>10</u> | x 3 = <u>30</u> |
| FACU species <u>15</u> | x 4 = <u>60</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Total s: <u>131</u> (A) | <u>284</u> (B) |
| Prevalence Index = B/A = <u>2.168</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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: AN31 Wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-8 | 10YR | 3/2 | | | | | | | Loam | |
| 8-16 | 2.5Y | 4/1 | 90% | 10YR | 5/8 | 10% | C | M | Fine Sandy Loam | |
| | | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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☐

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN31 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): undulating Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Transmission line maintained ROW

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN31 Upland**

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|------------------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| Sapling/Shrub Stratum (Plot size: 15') | | 0 = Total Cover | |
| 1. <u>Populus tremula</u> | 10 | <input checked="" type="checkbox"/> 47.6% | FACU |
| 2. <u>Prunus serotina</u> | 3 | <input type="checkbox"/> 14.3% | FACU |
| 3. <u>Acer saccharum</u> | 5 | <input checked="" type="checkbox"/> 23.8% | FACU- |
| 4. <u>Quercus rubra</u> | 3 | <input type="checkbox"/> 14.3% | FACU- |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| Herb Stratum (Plot size: 5') | | 21 = Total Cover | |
| 1. <u>Rubus alumnus</u> | 15 | <input type="checkbox"/> 14.6% | FACU- |
| 2. <u>Solidago canadensis</u> | 50 | <input checked="" type="checkbox"/> 48.5% | FACU |
| 3. <u>Onoclea sensibilis</u> | 33 | <input checked="" type="checkbox"/> 32.0% | FACW |
| 4. <u>Spiraea alba</u> | 5 | <input type="checkbox"/> 4.9% | FACW+ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| Woody Vine Stratum (Plot size: _____) | | 103 = Total Cover | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ |
| | | 0 = Total Cover | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>38</u> | x 2 = <u>76</u> |
| FAC species <u>0</u> | x 3 = <u>0</u> |
| FACU species <u>86</u> | x 4 = <u>344</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>124</u> (A) | <u>420</u> (B) |
| Prevalence Index = B/A = <u>3.387</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN31 Wetland



AN31 Upland



AN31 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN32 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS wetland entirely within maintained transmission line ROW.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|-------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 2 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN32 wetland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Spiraea alba</u> | 50 | <input checked="" type="checkbox"/> 83.3% | FACW+ |
| 2. <u>Acer rubrum</u> | 10 | <input type="checkbox"/> 16.7% | FAC |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 60 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. <u>Carex crinita</u> | 12 | <input type="checkbox"/> 12.6% | OBL |
| 2. <u>Onoclea sensibilis</u> | 33 | <input checked="" type="checkbox"/> 34.7% | FACW |
| 3. <u>Carex intumescens</u> | 25 | <input checked="" type="checkbox"/> 26.3% | FACW+ |
| 4. <u>Rubus hispidus</u> | 0 | <input type="checkbox"/> 0.0% | FACW |
| 5. <u>Solidago canadensis</u> | 25 | <input checked="" type="checkbox"/> 26.3% | FACU |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 95 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>12</u> | x 1 = <u>12</u> |
| FACW species <u>108</u> | x 2 = <u>216</u> |
| FAC species <u>10</u> | x 3 = <u>30</u> |
| FACU species <u>25</u> | x 4 = <u>100</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>155</u> (A) | <u>358</u> (B) |
| Prevalence Index = B/A = <u>2.310</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN32 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): undulating Slope: 8.0 % / 4.6 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

bouldery

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

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 Hydrology Present? Yes ☐ No ☒

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant
Species?

Sampling Point: AN32 upland

| Tree Stratum (Plot size: _____) | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: | |
|-------------------------------------------------------------------|---------------------|-------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | Number of Dominant Species That are OBL, FACW, or FAC: | 1 (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: | 3 (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: | 33.3% (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| Sapling/Shrub Stratum (Plot size: 15') 0 = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: Multiply by: | |
| 1. <u>Rhus copallinum</u> | 50 | <input checked="" type="checkbox"/> 76.9% NI | | OBL species | 10 x 1 = 10 |
| 2. <u>Pinus strobus</u> | 5 | <input type="checkbox"/> 7.7% FACU | | FACW species | 33 x 2 = 66 |
| 3. <u>Prunus serotina</u> | 5 | <input type="checkbox"/> 7.7% FACU | | FAC species | 15 x 3 = 45 |
| 4. <u>Acer rubrum</u> | 5 | <input type="checkbox"/> 7.7% FAC | | FACU species | 73 x 4 = 292 |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species | 0 x 5 = 0 |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: | 131 (A) 413 (B) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Prevalence Index = B/A = 3.153 | |
| Herb Stratum (Plot size: 5') 65 = Total Cover | | | | Hydrophytic Vegetation Indicators: | |
| 1. <u>Pteridium aquilinum</u> | 20 | <input type="checkbox"/> 17.2% FACU | | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation | |
| 2. <u>Rubus idaeus</u> | 10 | <input type="checkbox"/> 8.6% FAC- | | <input type="checkbox"/> Dominance Test is > 50% | |
| 3. <u>Rubus allegheniensis</u> | 10 | <input type="checkbox"/> 8.6% FACU- | | <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ | |
| 4. <u>Solidago canadensis</u> | 33 | <input checked="" type="checkbox"/> 28.4% FACU | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 5. <u>Phalaris arundinacea</u> | 33 | <input checked="" type="checkbox"/> 28.4% FACW+ | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 6. <u>Carex crinita</u> | 10 | <input type="checkbox"/> 8.6% OBL | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 7. _____ | 0 | <input type="checkbox"/> 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. | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| Woody Vine Stratum (Plot size: _____) 116 = Total Cover | | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | | |
| 0 = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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: AN32 upland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|--|------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-8 | 10YR | 3/3 | 100% | | | | | Loam | | |
| 8-13 | 10YR | 4/3 | 100% | | | | | Sandy Loam | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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☒

Remarks:



AN32 Upland



AN32 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN33 Wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PSS wetland within skidder trail.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **AN33 Wetland**

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|----------------------------------------|------------------|-------------------------------------------|------------------|
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <u>Cornus stolonifera</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FACW+ |
| 2. <u>Viburnum dentatum</u> | 5 | <input checked="" type="checkbox"/> 50.0% | FAC |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10 = Total Cover | | | |
| Herb Stratum (Plot size: 5') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. <u>Onoclea sensibilis</u> | 40 | <input checked="" type="checkbox"/> 29.9% | FACW |
| 2. <u>Solidago canadensis</u> | 33 | <input checked="" type="checkbox"/> 24.6% | FACU |
| 3. <u>Carex crinita</u> | 33 | <input checked="" type="checkbox"/> 24.6% | OBL |
| 4. <u>Rubus hispidus</u> | 25 | <input type="checkbox"/> 18.7% | FACW |
| 5. <u>Osmunda regalis</u> | 3 | <input type="checkbox"/> 2.2% | OBL |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 134 = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 0 = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>36</u> | x 1 = <u>36</u> |
| FACW species <u>70</u> | x 2 = <u>140</u> |
| FAC species <u>5</u> | x 3 = <u>15</u> |
| FACU species <u>33</u> | x 4 = <u>132</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>144</u> (A) | <u>323</u> (B) |
| Prevalence Index = B/A = <u>2.243</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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: AN33 Wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|--|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-14 | 10YR | 3/2 | 100% | | | | | | | Loam | |
| 14-20 | 2.5Y | 5/2 | 90% | 2.5Y | 5/1 | 10% | D | M | | Sand | |
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Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)

☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)

☐ Loamy Mucky Mineral (F1) LRR K, L)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)

☐ Coast Prairie Redox (A16) (LRR K, L, R)

☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

☐ Dark Surface (S7) (LRR K, L)

☐ Polyvalue Below Surface (S8) (LRR K, L)

☐ Thin Dark Surface (S9) (LRR K, L)

☐ Iron-Manganese Masses (F12) (LRR K, L, R)

☐ Piedmont Floodplain Soils (F19) (MLRA 149B)

☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒

No☐

Remarks:

Soil

Sampling Point: AN33 Wetland

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

| Depth (inches) | Matrix | | Redox Features | | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|--|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | | |
| 0-14 | 10YR | 3/2 | 100% | | | | | | | Loam | |
| 14-20 | 2.5Y | 5/2 | 90% | 2.5Y | 5/1 | 10% | D | M | | Sand | |
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Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 22-Aug-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN33 Upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN33 Upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|--------------------------------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <i>Fagus grandifolia</i> | 10 | <input checked="" type="checkbox"/> 33.3% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) |
| 2. <i>Acer saccharum</i> | 10 | <input checked="" type="checkbox"/> 33.3% | FACU- | |
| 3. <i>Tsuga canadensis</i> | 10 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') <div>30 = Total Cover</div> | | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 10 x 2 = 20 FAC species 3 x 3 = 9 FACU species 80 x 4 = 320 UPL species 75 x 5 = 375 Column Totals: 168 (A) 724 (B) Prevalence Index = B/A = 4.310 |
| 1. <i>Fagus grandifolia</i> | 25 | <input checked="" type="checkbox"/> 41.7% | FACU | |
| 2. <i>Populus tremula</i> | 15 | <input checked="" type="checkbox"/> 25.0% | FACU | |
| 3. <i>Pinus strobus</i> | 5 | <input type="checkbox"/> 8.3% | FACU | |
| 4. <i>Fraxinus pennsylvanica</i> | 10 | <input type="checkbox"/> 16.7% | FACW | |
| 5. <i>Quercus rubra</i> | 5 | <input type="checkbox"/> 8.3% | FACU- | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: 5') <div>60 = Total Cover</div> | | | | |
| 1. <i>Dennstaedtia punctilobula</i> | 75 | <input checked="" type="checkbox"/> 96.2% | UPL | |
| 2. <i>Malanthemum canadense</i> | 3 | <input type="checkbox"/> 3.8% | FAC- | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 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. |
| Woody Vine Stratum (Plot size: _____) <div>78 = Total Cover</div> | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| <div>0 = Total Cover</div> | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN33 Wetland



AN33 Upland



AN33 Wetland



AN33 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 26-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN35 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO/PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Remarks: (Explain alternative procedures here or in a separate report.) Wetland partially within Transmission ROW and extends downslope to the North. | |

Hydrology

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 2 | | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Sampling Point: **AN35 wetland**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|
| 1. <u>Acer rubrum</u> | 15 | <input checked="" type="checkbox"/> 27.3% | FAC |
| 2. <u>Betula alleghaniensis</u> | 15 | <input checked="" type="checkbox"/> 27.3% | FAC |
| 3. <u>Fraxinus pennsylvanica</u> | 25 | <input checked="" type="checkbox"/> 45.5% | FACW |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | | 55 = Total Cover | |
| 1. <u>Fraxinus pennsylvanica</u> | 20 | <input checked="" type="checkbox"/> 66.7% | FACW |
| 2. <u>Ilex verticillata</u> | 10 | <input checked="" type="checkbox"/> 33.3% | FACW+ |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | | 30 = Total Cover | |
| 1. <u>Onoclea sensibilis</u> | 50 | <input checked="" type="checkbox"/> 83.3% | FACW |
| 2. <u>Osmunda cinnamomea</u> | 10 | <input type="checkbox"/> 16.7% | FACW |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | | 60 = Total Cover | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | | 0 = Total Cover | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>115</u> | x 2 = <u>230</u> |
| FAC species <u>30</u> | x 3 = <u>90</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>145</u> (A) | <u>320</u> (B) |
| Prevalence Index = B/A = <u>2.207</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 26-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an35 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): flat Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an35 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|
| 1. <u>Quercus rubra</u> | 33 | <input checked="" type="checkbox"/> 46.5% | FACU- |
| 2. <u>Fagus grandifolia</u> | 20 | <input checked="" type="checkbox"/> 28.2% | FACU |
| 3. <u>Pinus strobus</u> | 8 | <input type="checkbox"/> 11.3% | FACU |
| 4. <u>Acer saccharum</u> | 10 | <input type="checkbox"/> 14.1% | FACU- |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Sapling/Shrub Stratum (Plot size: 15') | 71 = Total Cover | | |
| 1. <u>Fagus grandifolia</u> | 15 | <input checked="" type="checkbox"/> 60.0% | FACU |
| 2. <u>Fraxinus pennsylvanica</u> | 10 | <input checked="" type="checkbox"/> 40.0% | FACW |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Herb Stratum (Plot size: 5') | 25 = Total Cover | | |
| 1. <u>Trientalis borealis</u> | 15 | <input checked="" type="checkbox"/> 30.0% | FAC |
| 2. <u>Aralia nudicaulis</u> | 25 | <input checked="" type="checkbox"/> 50.0% | FACU |
| 3. <u>Dennstaedtia punctilobula</u> | 10 | <input checked="" type="checkbox"/> 20.0% | UPL |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | |
| Woody Vine Stratum (Plot size: _____) | 50 = Total Cover | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | |
| | 0 = Total Cover | | |

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

| | |
|---------------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>10</u> | x 2 = <u>20</u> |
| FAC species <u>15</u> | x 3 = <u>45</u> |
| FACU species <u>111</u> | x 4 = <u>444</u> |
| UPL species <u>10</u> | x 5 = <u>50</u> |
| Column Totals: <u>146</u> (A) | <u>559</u> (B) |
| Prevalence Index = B/A = <u>3.829</u> | |

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 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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.

[illegible]



AN35 Wetland

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an36 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Saddle Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Saddle PFO between ridgeline near ATV trail. Drains west through boulders

Hydrology

| | | | |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|---|-------------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 1 | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an36 wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: <u>5</u> (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 20 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 34.5% | FAC | Total % Cover of: <u>3</u> Multiply by: <u>3</u> |
| 2. <u>Betula alleghaniensis</u> | 20 | <input checked="" type="checkbox"/> 34.5% | FAC | OBL species <u>3</u> x 1 = <u>3</u> |
| 3. <u>Fraxinus pennsylvanica</u> | 8 | <input type="checkbox"/> 13.8% | FACW | FACW species <u>23</u> x 2 = <u>46</u> |
| 4. <u>Viburnum lantanoides</u> | 10 | <input type="checkbox"/> 17.2% | FAC | FAC species <u>85</u> x 3 = <u>255</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>111</u> (A) <u>304</u> (B) |
| | 58 = Total Cover | | | Prevalence Index = B/A = <u>2.739</u> |
| Herb Stratum (Plot size: 5') | | | | Hydrophytic Vegetation Indicators: |
| 1. <u>Betula alleghaniensis</u> | 15 | <input checked="" type="checkbox"/> 45.5% | FAC | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 2. <u>Osmunda regalis</u> | 3 | <input type="checkbox"/> 9.1% | OBL | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 3. <u>Osmunda cinnamomea</u> | 15 | <input checked="" type="checkbox"/> 45.5% | FACW | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 33 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | | | | |
| 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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an36 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Saddle Local relief (concave, convex, none): convex Slope: 15.0 % / 8.5 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an36 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer saccharum</u> | 15 | <input checked="" type="checkbox"/> 33.3% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B) |
| 2. <u>Fagus grandifolia</u> | 15 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 3. <u>Betula alleghaniensis</u> | 15 | <input checked="" type="checkbox"/> 33.3% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 45 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>66</u> x 4 = <u>264</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>86</u> (A) <u>324</u> (B) Prevalence Index = B/A = <u>3.767</u> |
| 1. <u>Fagus grandifolia</u> | 8 | <input checked="" type="checkbox"/> 30.8% | FACU | |
| 2. <u>Picea rubens</u> | 18 | <input checked="" type="checkbox"/> 69.2% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 26 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 2. <u>Fagus grandifolia</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 3. <u>Trientalis borealis</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 15 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN36 Wetand

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an37 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 1 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an37 wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|--------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 20 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: <u>63</u> (A) Multiply by: <u>2.746</u> OBL species <u>3</u> x 1 = <u>3</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>63</u> (A) <u>173</u> (B) Prevalence Index = B/A = <u>2.746</u> |
| 1. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 28.6% | FAC | |
| 2. <u>Betula alleghaniensis</u> | 20 | <input checked="" type="checkbox"/> 57.1% | FAC | |
| 3. <u>Vaccinium corymbosum</u> | 5 | <input type="checkbox"/> 14.3% | FACW- | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 35 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Osmunda cinnamomea</u> | 5 | <input checked="" type="checkbox"/> 62.5% | FACW | |
| 2. <u>Carex lurida</u> | 3 | <input checked="" type="checkbox"/> 37.5% | OBL | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 8 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| | 0 = Total Cover | | | |

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.

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: Sampling Point: an37 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 25.0 % / 14.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an37 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Quercus rubra</u> | 50 | <input checked="" type="checkbox"/> 60.2% | FACU- | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B) |
| 2. <u>Tsuga canadensis</u> | 33 | <input checked="" type="checkbox"/> 39.8% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 83 = Total Cover | | | 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 113 x 4 = 452 UPL species 0 x 5 = 0 Column Totals: 138 (A) 527 (B) Prevalence Index = B/A = 3.819 |
| 1. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 25.0% | FAC | |
| 2. <u>Acer pensylvanicum</u> | 15 | <input checked="" type="checkbox"/> 37.5% | FACU | |
| 3. <u>Viburnum lantanoides</u> | 15 | <input checked="" type="checkbox"/> 37.5% | FAC | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 40 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Aralia nudicaulis</u> | 5 | <input checked="" type="checkbox"/> 33.3% | FACU | |
| 2. <u>Quercus rubra</u> | 10 | <input checked="" type="checkbox"/> 66.7% | FACU- | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 15 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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.

[illegible]



AN37 Wetand

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: an38 wetland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO/PSS

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Potential Vernal Pool. Wetland in ledge pocket on West side of ridgeline.

Hydrology

| | | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | |
|---------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------|
| Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 12 | Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): 0 | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: an38 wetland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 100.0% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | Total Number of Dominant Species Across All Strata: <u>4</u> (B) |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 20 = Total Cover | | | Prevalence Index worksheet: |
| 1. <u>Ilex verticillata</u> | 50 | <input checked="" type="checkbox"/> 100.0% | FACW+ | Total % Cover of: <u>3</u> Multiply by: <u>3</u> |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | OBL species <u>3</u> x 1 = <u>3</u> |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | FACW species <u>75</u> x 2 = <u>150</u> |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | FAC species <u>20</u> x 3 = <u>60</u> |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | FACU species <u>0</u> x 4 = <u>0</u> |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | UPL species <u>0</u> x 5 = <u>0</u> |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | Column Totals: <u>98</u> (A) <u>213</u> (B) |
| Herb Stratum (Plot size: 5') | 50 = Total Cover | | | Prevalence Index = B/A = <u>2.173</u> |
| 1. <u>Osmunda cinnamomea</u> | 10 | <input checked="" type="checkbox"/> 35.7% | FACW | Hydrophytic Vegetation Indicators: |
| 2. <u>Iris versicolor</u> | 3 | <input type="checkbox"/> 10.7% | OBL | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation |
| 3. <u>Coptis trifolia</u> | 15 | <input checked="" type="checkbox"/> 53.6% | FACW | <input checked="" type="checkbox"/> Dominance Test is > 50% |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | Definitions of Vegetation Strata: |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.. |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | Woody vine - All woody vines greater than 3.28 ft in height. |
| Woody Vine Stratum (Plot size: _____) | 28 = Total Cover | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | |

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: an38 wetland

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 27-Sep-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN38 upland

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): undulating Slope: 25.0 % / 14.0 °

Subregion (LRR or MLRA): Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |
| Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-neutral Test (D5) | |

| | | | |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|--|
| Field Observations: | | | |
| Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | | |
| | | Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | |

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

Remarks:

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN38 upland

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|----------------------------------------|------------------|--------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Pinus strobus</u> | 33 | <input checked="" type="checkbox"/> 34.4% | FACU | Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) |
| 2. <u>Fagus grandifolia</u> | 33 | <input checked="" type="checkbox"/> 34.4% | FACU | |
| 3. <u>Quercus rubra</u> | 15 | <input type="checkbox"/> 15.6% | FACU- | |
| 4. <u>Tsuga canadensis</u> | 15 | <input type="checkbox"/> 15.6% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 96 = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>123</u> x 4 = <u>492</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>123</u> (A) <u>492</u> (B) Prevalence Index = B/A = <u>4.000</u> |
| Sapling/Shrub Stratum (Plot size: 15') | | | | |
| 1. <u>Fagus grandifolia</u> | 25 | <input checked="" type="checkbox"/> 100.0% | FACU | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 25 = Total Cover | | | | |
| Herb Stratum (Plot size: 5') | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Quercus rubra</u> | 1 | <input checked="" type="checkbox"/> 50.0% | FACU- | |
| 2. <u>Fagus grandifolia</u> | 1 | <input checked="" type="checkbox"/> 50.0% | FACU | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2 = Total Cover | | | | 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. |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 0 = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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: AN38 upland

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

| Depth (inches) | Matrix | | Redox Features | | | | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|--|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | | |
| 0-5 | 10YR | 3/2 | 100% | | | | | Loam | |
| 5-7 | 2.5Y | 6/1 | 100% | | | | | Fine Sandy Loam | |
| 7-14 | 10YR | 4/4 | 100% | | | | | Sandy Loam | |
| 14-20 | 10YR | 4/6 | 100% | | | | | Sandy Loam | |
| | | | | | | | | | |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Loamy Mucky Mineral (F1) LRR K, L)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : ³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Remarks:



AN38 Wetland



AN38 Upland



AN38 Wetland



AN38 Wetland

| | | | | | | | | | |
|--------------------------------------|--|---------------------|------------------------------|---------------------------------------|--------|---------------------|-----------------|-----------|---------------|
| Project/Site: | | Antrim Wind Project | City/County: | | Antrim | Sampling Date: | | 30-Nov-11 | |
| Applicant/Owner: | | | Eolian Renewable Energy, LLC | State: | | NH | Sampling Point: | | AN41up |
| Investigator(s): | | | AF JG | Section, Township, Range: | | S. | T. | R. | |
| Landform (hillslope, terrace, etc.): | | | Toeslope | Local relief (concave, convex, none): | | convex | Slope: | | 0.0 % / 0.0 ° |
| Subregion (LRR or MLRA): | | LRR R | Lat.: | | | Long.: | | Datum: | |
| Soil Map Unit Name: | | | | | | NWI classification: | | | |

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5) | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Field Observations:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> <div style="width: 45%;"> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> <p>Depth (inches): _____</p> </div> </div> </div> <div style="width: 50%;"> <p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p> </div> </div> | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: AN41up

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|-------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 20 | <input checked="" type="checkbox"/> 33.3% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B) |
| 2. <u>Fagus grandifolia</u> | 15 | <input checked="" type="checkbox"/> 25.0% | FACU | |
| 3. <u>Picea rubens</u> | 10 | <input type="checkbox"/> 16.7% | FACU | |
| 4. <u>Quercus rubra</u> | 15 | <input checked="" type="checkbox"/> 25.0% | FACU- | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Sapling/Shrub Stratum (Plot size: 15') | 60 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 39 x 3 = 117 FACU species 120 x 4 = 480 UPL species 0 x 5 = 0 Column Totals: 159 (A) 597 (B) Prevalence Index = B/A = 3.755 |
| 1. <u>Fagus grandifolia</u> | 10 | <input checked="" type="checkbox"/> 40.0% | FACU | |
| 2. <u>Picea rubens</u> | 10 | <input checked="" type="checkbox"/> 40.0% | FACU | |
| 3. <u>Pinus strobus</u> | 5 | <input checked="" type="checkbox"/> 20.0% | FACU | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Herb Stratum (Plot size: 5') | 25 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Dryopteris intermedia</u> | 15 | <input checked="" type="checkbox"/> 20.3% | FACU | |
| 2. <u>Gaultheria procumbens</u> | 15 | <input checked="" type="checkbox"/> 20.3% | FACU | |
| 3. <u>Thelypteris noveboracensis</u> | 19 | <input checked="" type="checkbox"/> 25.7% | FAC | |
| 4. <u>Lycopodium obscurum</u> | 25 | <input checked="" type="checkbox"/> 33.8% | FACU | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| Woody Vine Stratum (Plot size: _____) | 74 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | _____ | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> |

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:

AN41up

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

| Depth (inches) | Matrix | | Redox Features | | | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|------|-------------------|------------------|---|---|------------|---------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | | | |
| 0-5 | 10YR | 3/2 | 100% | | | | | | Loam | |
| 5-12 | 10YR | 4/3 | 100% | | | | | | Sandy Loam | |
| 12-15 | 2.5Y | 5/2 | 95% | 10YR | 4/6 | 5% | C | M | Sandy Loam | |
| 15+ | | | | | | | | | | stony refusal |
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¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)☐ Histic Epipedon (A2)☐ Black Histic (A3)☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5)☐ Depleted Below Dark Surface (A11)☐ Thick Dark Surface (A12)☐ Sandy Muck Mineral (S1)☐ Sandy Gleyed Matrix (S4)☐ Sandy Redox (S5)☐ Stripped Matrix (S6)☐ Dark Surface (S7) (LRR R, MLRA 149B)

☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)☐ Loamy Mucky Mineral (F1) LRR K, L☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils :³

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)☐ Coast Prairie Redox (A16) (LRR K, L, R)☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)☐ Dark Surface (S7) (LRR K, L)☐ Polyvalue Below Surface (S8) (LRR K, L)☐ Thin Dark Surface (S9) (LRR K, L)☐ Iron-Manganese Masses (F12) (LRR K, L, R)☐ Piedmont Floodplain Soils (F19) (MLRA 149B)☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)☐ Red Parent Material (TF2)☐ Very Shallow Dark Surface (TF12)☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):Type: BoulderyDepth (inches): 15

Hydric Soil Present?YesNo

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Antrim Wind Project City/County: Antrim Sampling Date: 30-Nov-11

Applicant/Owner: Eolian Renewable Energy, LLC State: NH Sampling Point: AN41wet

Investigator(s): AF JG Section, Township, Range: S. T. R.

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R Lat.: Long.: Datum:

Soil Map Unit Name: NWI classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | |

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

Isolated PFO at toe of slope in a basin formation.

Hydrology

| | | | |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of 2 required) | |
| Primary Indicators (minimum of one required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input checked="" type="checkbox"/> FAC-neutral Test (D5) | |

Field Observations:

| | | | |
|----------------------------------------------------|---------------------------------------------------------------|-----------------|---|
| Surface Water Present? | Yes <input type="radio"/> No <input checked="" type="radio"/> | Depth (inches): | |
| Water Table Present? | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="radio"/> No <input type="radio"/> | Depth (inches): | 0 |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Sphagnum 50% cover.

VEGETATION - Use scientific names of plants

Dominant Species?

Sampling Point: **AN41wet**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Rel.Strat. Cover | Indicator Status | Dominance Test worksheet: |
|-----------------------------------------------|------------------|--------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Acer rubrum</u> | 33 | <input checked="" type="checkbox"/> 76.7% | FAC | Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) |
| 2. <u>Fraxinus pennsylvanica</u> | 10 | <input checked="" type="checkbox"/> 23.3% | FACW | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Sapling/Shrub Stratum (Plot size: 15') | 43 = Total Cover | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>51</u> x 3 = <u>153</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>111</u> (A) <u>273</u> (B) Prevalence Index = B/A = <u>2.459</u> |
| 1. <u>Acer rubrum</u> | 10 | <input checked="" type="checkbox"/> 55.6% | FAC | |
| 2. <u>Betula alleghaniensis</u> | 8 | <input checked="" type="checkbox"/> 44.4% | FAC | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Herb Stratum (Plot size: 5') | 18 = Total Cover | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Osmunda cinnamomea</u> | 50 | <input checked="" type="checkbox"/> 100.0% | FACW | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 5. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 6. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 7. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 8. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 9. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 10. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 11. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 12. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| Woody Vine Stratum (Plot size: _____) | 50 = Total Cover | | | 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. |
| 1. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 2. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 3. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| 4. _____ | 0 | <input type="checkbox"/> 0.0% | | |
| | 0 = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> |

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.

[illegible]



AN41 Wetland

EXHIBIT 6
VERNAL POOL REPORT

VERNAL POOL 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

TABLE OF CONTENTS

| | | |
|------------|-----------------------------------------------|-----------|
| 1.0 | Introduction..... | 1 |
| 2.0 | Vernal Pool Survey Methodology..... | 3 |
| 2.1 | General Field Survey Approach | 4 |
| 2.2 | Vernal Pool Species Observations..... | 4 |
| 3.0 | Vernal Pool field survey results | 11 |
| 4.0 | Vernal Pool Impacts | 13 |
| 5.0 | References..... | 15 |

LIST OF FIGURES

| | | |
|-----------|------------------------------|----|
| Figure 1. | Project Location Map | 2 |
| Figure 2. | Vernal Pool Habitat Map..... | 14 |

LIST OF TABLES

| | | |
|----------|------------------------------------------------------|----|
| Table 1: | Summary of vernal pools within antrim windpark | 11 |
| Table 2: | Vernal Pool Characteristics | 11 |

LIST OF APPENDICES

APPENDIX A – NATURAL RESOURCE SURVEY MAP

APPENDIX B – VERNAL POOL FIELD DATA
 Vernal Pool Field Data Forms
 Vernal Pool Site Photographs

1.0 INTRODUCTION

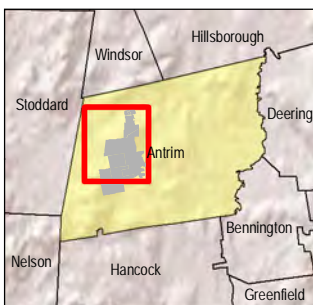
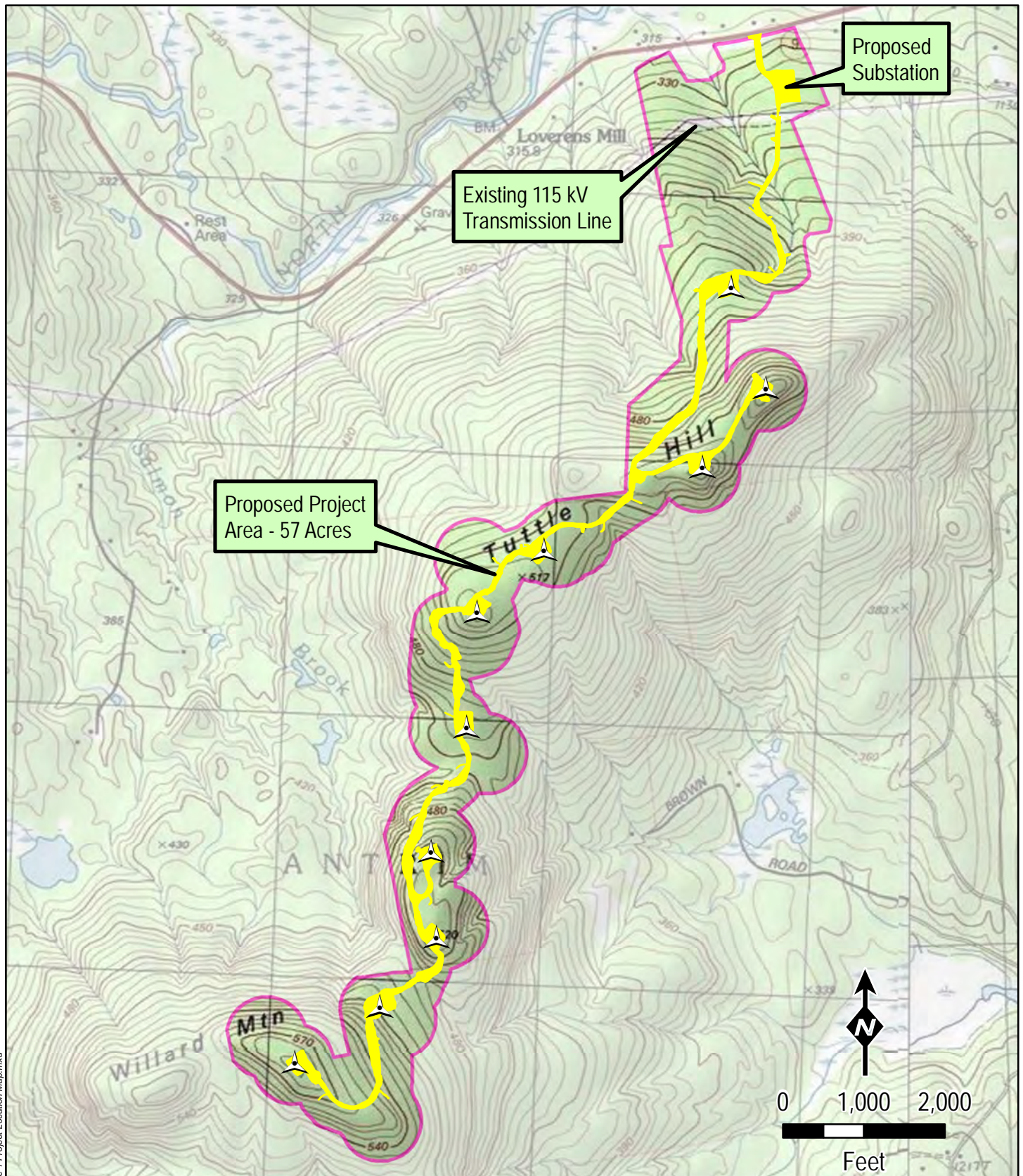
This vernal pool report has been prepared by TRC for Antrim Wind Energy, LLC (AWE) in support of state and federal environmental permit applications. Antrim Wind Energy LLC (AWE) is proposing to construct the Antrim Wind Energy Project (Project) on Tuttle Hill and Willard Mountain in the Town of Antrim, Hillsborough County, 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 10 wind turbines, an electrical collection system and interconnection substation, approximately 4 miles of 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 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 $\frac{3}{4}$ 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 Figure 1 on the following page for a map of the Project area and Project elements.




TRC Environmental Corporation (TRC) was retained by AWE to identify and delineate vernal pools within the project area to support the design, or layout, of the proposed facilities. TRC has prepared this vernal pool 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).

TRC conducted vernal pool surveys within an approximately 409 acre survey area during May 2nd, 5th and 9th of 2011. Follow up visits were made to each pool during early June to confirm their condition (i.e., watered or dry). Additional survey was also performed during September in approximately 53 acres added to the Project survey area in several discreet sections to provide for expanded project design options. An additional potential vernal pool was identified in this area and will be revisited during the appropriate survey period in the spring of 2012 to confirm its function and spatial extents.

The following sections describe the vernal pool field survey methodology utilized.




Legend

-  Proposed WTG
-  Proposed Project Area - 57 Acres
-  Resource Survey Area



**ANTRIM WIND
ENERGY PROJECT**
354 KEENE ROAD, ANTRIM, NH

Figure 1
Project Location Map

Produced by:  CTRC

1/5/2012

2.0 VERNAL POOL SURVEY METHODOLOGY

For the purposes of the field effort, TRC adopted the vernal pool definitions as described by the USACE Programmatic General Permit (PGP) for the State of New Hampshire and the NHDES Administrative Rules Env-Wt 101.99 for identifying vernal pools and vernal pool habitat along the Project corridor. With the exception of minor differences, each agency has a similar definition of what constitutes a vernal pool. Each respective definition is provided below.

According to the ACOE NHPGP, vernal pools and vernal pool habitat consists of:

*“VPs are confined basin depressions with water for two or more continuous months in the spring and/or summer, for which evidence of one of more of the following indicator vernal pools species: wood frogs (*Rana sylvatica*), mole salamanders (*Ambystoma* spp), and fairy shrimp (*Eubrachipus* spp) has been documented **OR** for which evidence of two or more of the following facultative organisms: caddisfly (*Trichoptera*) larvae casings, fingernail clams (*Sphaeriidae*), or amphibious snails (*Basammatophora*) and evidence that the pool does not contain an established reproducing fish population has been documented. Vernal pool habitat is the seasonal pool depression, seasonal pool envelope (100 FT radius from the VP edge) and seasonal pool terrestrial habitat (750 FT radius from the VP edge). The Corps will determine on a case-by-case basis which vernal pools are within their jurisdiction.”*

The NHDES wetlands Bureau defines a vernal pool in their Administrative Rules Env-Wt 101.106 as:

“a surface water or wetland, including an area intentionally created for purposes of compensatory mitigation, which provides breeding habitat for amphibians and invertebrates that have adapted to the unique environments provided by such pools and which:

- (a) Is not the result of on-going anthropogenic activities that are not intended to provide compensatory mitigation, including but not limited to:*
 - (1) Gravel pit operations in a pit that has been mined at least every other year; and*
 - (2) Logging and agricultural operations conducted in accordance with all applicable New Hampshire statutes and rules; and*
- (b) Typically has the following characteristics:*
 - (1) Cycles annually from flooded to dry conditions, although the hydroperiod, size, and shape of the pool might vary from year to year;*
 - (2) Forms in a shallow depression or basin;*
 - (3) Has no permanently flowing outlet;*
 - (4) Holds water for at least 2 continuous months following spring ice-out;*
 - (5) Lacks a viable fish population; and*
 - (6) Supports one or more primary vernal pool indicators, or 3 or more secondary vernal pool indicators.”*

Primary vernal pool indicators in NH include wood frogs, mole salamanders and fairy shrimp. Secondary indicators include species of aquatic insects including the larvae of caddisfly, dragonfly, and damselfly; fingernail clams and certain aquatic beetles; and other specific species that inhabit vernal pools.

TRC utilized a comprehensive vernal pool survey protocol and field data forms found in the document “Identification and Documentation of Vernal Pools in New Hampshire”, published by the New Hampshire Fish and Game Department Nongame and Endangered Wildlife Program (NHFGD 1997). In general, field surveys were conducted during the recommended timeframes for identifying amphibian egg masses and tabulating egg mass abundance. Peak breeding for wood frogs is generally earlier in the season, typically mid to late April, than that of the spotted and blue-spotted salamanders (ambystomid salamanders), typically in early May (Hunter & Calhoun 1999). Seasonal and weather conditions were also considered when applying these recommended survey timeframes as amphibian breeding can vary based on springtime conditions. For example, experiencing a cold spring versus a warm, wet spring could delay amphibian breeding for as much as two weeks and vice versa. Therefore, TRC attempted to conduct the surveys in early May of 2011 to capture the overlap of peak breeding of both the wood frogs and spotted salamanders.

2.1 General Field Survey Approach

Field surveys were conducted by a team of two qualified biologists familiar with vernal pool resources within New England. The team completed visual meanders surveys throughout the entire Project area. Each field crew was outfitted with the necessary field equipment to conduct a detailed survey and to thoroughly document each pool that was inventoried. Typical equipment consisted of hip/chest waders, polarized sunglasses, view tubes, dipnet, thermometer, fairy shrimp sampling equipment, and digital camera. For each pool, a standardized vernal pool determination field data form was completed, the vernal pool area was photo-documented, and the pool basin was located in the field using a global positioning system (GPS) unit. GPS data was specifically collected at the approximate perceived boundary of the highwater mark for all vernal pools exceeding approximately 10 feet in diameter.

2.2 Vernal Pool Species Observations

Egg mass surveys were conducted during the day time hours, preferably when the sun was out, between the hours of 9:00am to 3:00pm to the extent possible to maximize viewing opportunity within the pools. Two biologists began at one end of the pool and thoroughly searched the entire area simultaneously wading along the pool margin. The entire pool was searched (including the center) in this manner to ensure that all egg masses were tabulated. To reduce the possibility of overlooking or misidentifying egg masses, the field biologists worked together to observe, identify, and count egg masses. When agreement was reached regarding the species and number of egg masses within an individual pool, a data form and all other necessary pool documentation was completed (see Natural Resource Survey Map in Appendix A). As described in Section 2.0 above, each pool was examined twice during the survey period to document all vernal pool species utilizing the resource.

As with the egg mass surveys, surveys to document the presence/absence of fairy shrimp were also conducted concurrently. When optimal daytime conditions were not available or for pools with dark tannin stained water, field crews used dip nets and view tubes to search for fairy shrimp. When possible, sampling efforts were focused on sunny patches along the pool, as fairy shrimp often congregate in these areas.

Vernal pools were classified into one of three categories: (1) natural vernal pools; (2) potential vernal pools; and (3) non-jurisdictional features. The natural vernal pools were those pools as defined in Section 2.0 above that met the state criteria under the Administrative Rules. The potential pools were those pools that were identified outside of the indicator species breeding season as the scope of the project had changed after the initial vernal pool survey was performed. These pools had the abiotic characteristics as described in the state and federal definitions, but would require a visit in breeding season to confirm the presence of the indicator species use. The “non-jurisdictional feature” category included all other areas where amphibian breeding was documented but did not meet the state and federal definition of a vernal pool described in Section 2.0.

3.0 VERNAL POOL FIELD SURVEY RESULTS

Vernal pool surveys were conducted within the Project area on May 2nd, 5th and 9th of 2011, with additional survey conducted in extra project area performed in September 2011. A total of 7 features were identified within the Project area. Of these, 5 were identified as Natural Vernal pools, 1 as a potential vernal pool (located in September), and 1 feature was designated as a non-jurisdictional amphibian breeding area. Mapping of the pools is provided on the Natural Resource Survey Map in Appendix A, and the field data forms and site photographs for each feature are provided in Appendix B. An abbreviated summary of the vernal pool data is provided in Table 1 below.

TABLE 1: SUMMARY OF VERNAL POOLS WITHIN ANTRIM WINDPARK

| Pool Type | No. of Features Within the Project Survey Corridor |
|----------------------------|----------------------------------------------------|
| Natural Vernal Pool | 5 |
| Potential Vernal Pool | 1 |
| Non-jurisdictional Feature | 1 |
| TOTAL | 7 |

A summary of the vernal pool characteristics for each pool is provided in Table 2 below. In summary, only VP4 contained significant numbers of egg masses. Vernal Pool Data Sheets are included in Appendix B.

TABLE 2: VERNAL POOL CHARACTERISTICS

| Pool ID | Date Surveyed | Natural Setting (y/n) | Indicator Species Observed | Facultative Species Observed | Holds Water For At Least Two Months (y/n) | Associated Wetland |
|---------|---------------|-----------------------|--------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------|--------------------|
| VP1 | 5/2/2011 | Y | Spotted Salamander – 8 egg masses Wood Frog – 5 egg masses Green Frog - Vocalization | Green frog - Vocalization | Y | AN1 |
| VP2 | 5/5/2011 | Y | Spotted Salamander – 16 egg masses Wood Frog – 1 egg mass | | Y | AN4 |
| VP3 | 5/5/2011 | Y | Spotted Salamander – 9 egg masses Wood Frog – 5 egg masses | Red-spotted newt - 1 adult | Y | AN5 |
| VP4 | 5/5/2011 | Y | Spotted Salamander – 55 egg masses Wood Frog – 4 egg masses | | Y | AN25 |
| VP5 | 5/9/2011 | Y | Spotted Salamander – 10 egg masses | | Y | AN24 |
| VP6 | 5/9/2011 | N | Spotted Salamander – 9 egg masses | | N | Upland |
| VP7 | 9/27/2011 | Y | None Observed | | Y | AN38 |

Six of the pools observed occurred in natural isolated basins without an inlet or an outlet and no populations of predatory fish. Vernal Pools 1-5 and 7 are within isolated palustrine forested wetlands along the Tuttle Hill ridgeline and are located in depressions within the regional bedrock.

Vernal Pool 6 is located within a depression in an old woods road and is a man-made feature. This pool was also observed to be completely dry on June 6, 2011. No hydrophytic vegetation was observed in the vicinity of the pool depression and as a result is not a jurisdictional wetland. Therefore, the pool is considered a non-jurisdictional feature.

During the siting phase of the Project, several routing options were evaluated that were later rejected due to landowner or environmental concerns. During the spring and summer of 2011 when these particular route options were still under consideration, additional surveys for vernal pools were completed. As a result, one other feature (VP7) was identified within the current Project area. VP7 is located within an isolated forested wetland (Wetland AN38) west of proposed turbines 5 and 6. The wetland was observed to have an area of standing water approximately 1 foot deep and contained an abundance of shrubby vegetation, conducive of supporting egg attachment sites for pool breeding amphibians. An ephemeral outlet was observed draining to the northwest through a gap in the regional bedrock, but did not meet the criteria for a stream or wetland and did not have the necessary characteristics to support predatory fish populations. This potential vernal pool is very similar in character to the confirmed Vernal Pools 5 and 4, and therefore will be considered in a similar manner as those pools.

Although intensively surveyed for, no fairy shrimp were found or documented within any of the vernal pools. Furthermore, no rare or state-listed threatened or endangered species known to use vernal pools for at least one critical life stage were documented in any of the vernal pools found within the Project area. The field data forms and site photographs for these seven areas are provided in Appendix B.

4.0 VERNAL POOL IMPACTS

There are no impacts to vernal pool depressions. Impacts to vernal pools are indirect and are from road and turbine construction in areas adjacent to the pools. The indirect impacts to the 5 natural vernal pools (VP1-VP5) and the potential vernal pool (VP7) were all assessed. In discussions with Mark Kern from the U.S. Environmental Protection Agency and David Keddell from the Army Corps (during a site visit to the vernal pools December 13, 2011), the assessment of impacts should consider the project footprint within 250 feet of the pools, and the area within 100 feet of the vernal pool depression. The upland and wetland area within 250 feet and adjacent to the vernal pool is defined as vernal pool “terrestrial habitat”, and the area within 100 feet of the pool is the vernal pool “envelope” (Calhoun and Klemens 2002; Calhoun and deMaynadier 2004). See Figure 2 for detailed maps of the vernal pools and the terrestrial habitat areas.

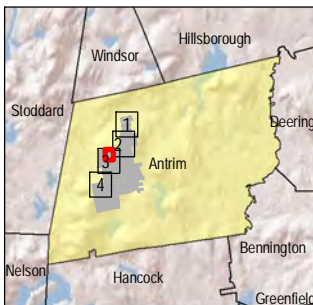
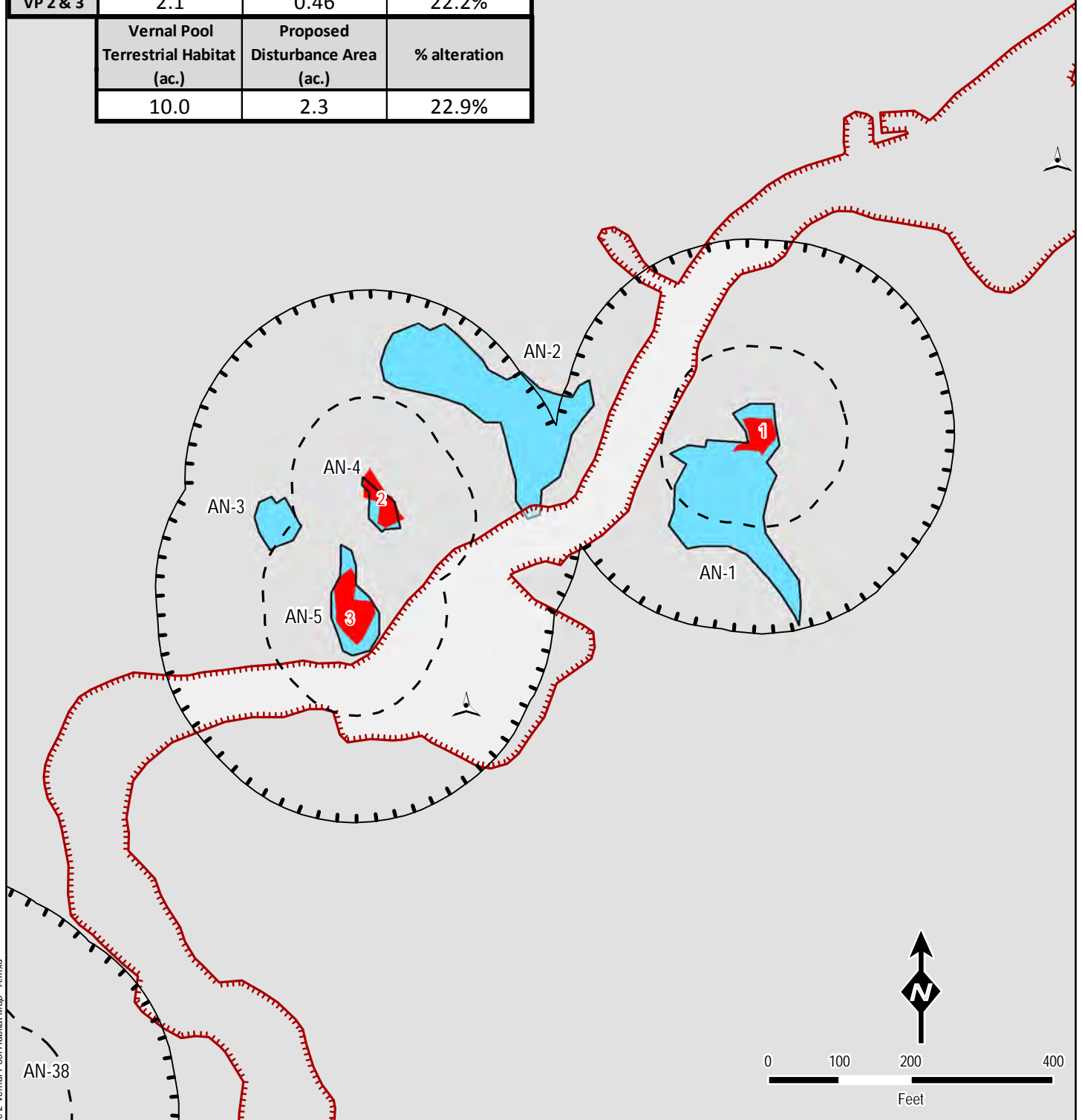
The vernal pools found on this site are in three distinct areas. Vernal pools 1, 2 and 3 are close to each other, and their terrestrial habitats overlap (“Habitat A”). Vernal pools 4 and 5 are also close to each other and their respective terrestrial habitat areas also overlap (“Habitat C”). Potential vernal pool VP7 terrestrial habitat does not overlap with any other vernal pool habitat (“Habitat B”).

There are no state regulations in New Hampshire, other than wetland protection rules, to regulate development within and adjacent to vernal pools. The Army Corps does regulate impacts to vernal pools as a type of special wetland through Section 404 of the Clean Water Act. The Army Corps Programmatic General Permit No: NAE-2007-461 (PGP) for the State of New Hampshire states that applicants must minimize surrounding upland impacts to the greatest extent practicable, with the effort to minimize impacts being commensurate with the value of the VP. The Army Corps PGP also recommends that impacts should be excluded from the vernal pool envelope and that certain guidelines for vernal pool management are followed, which suggest that the developed area (such as gravel surfaces) is kept to less than 25% of the terrestrial habitat area (Calhoun and Klemens 2002).

A gravel road and turbine pad is found within vernal pool Habitat A and a small portion of road is found within Habitat B. Analysis demonstrates that the impact to Habitat A terrestrial habitat is 2.3 acres of the 10 acre terrestrial habitat area, or 22.9% of the total terrestrial habitat area. Vernal pool 1 envelope impact is .01 acre of a 1.2 acre envelope area, or 1.1% of the envelope. Vernal pools 2 and 3 envelope impact is 0.46 acres to a 2.1 acre envelope area, or 22.2% of the envelope. Impact to Habitat B is approximately 0.02 acres of the 4.9 acre terrestrial habitat area, or 0.4% of the total terrestrial habitat area. There is no impact to Habitat B (VP7) vernal pool envelope. There is no impact to the terrestrial habitat or envelope of Habitat C.

The level of impact to the terrestrial habitat areas is below the recommended 25% developed area threshold. There is, however some impact to the vernal pool envelope area. These impacts are mitigated by the gravel road not being open to public vehicle traffic and as such will have a very limited volume of traffic and a very low potential to impact any vernal pool species crossing the road. Narrow gravel roads are also not significant barriers to amphibians, and will not hinder movement of the animals through the area. It is anticipated that the proposed development of this area will have no impact on the productivity of these vernal pools.

| | Vernal Pool Envelope (ac.) | Proposed Disturbance Area (ac.) | % alteration |
|----------|---------------------------------------|---------------------------------|--------------|
| VP 1 | 1.2 | 0.01 | 1.1% |
| VP 2 & 3 | 2.1 | 0.46 | 22.2% |
| | Vernal Pool Terrestrial Habitat (ac.) | Proposed Disturbance Area (ac.) | % alteration |
| | 10.0 | 2.3 | 22.9% |



Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Potential Vernal Pool
- Vernal Pool Envelope (100')
- Vernal Pool Terrestrial Habitat (250')
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label



ANTRIM WIND ENERGY PROJECT ANTRIM, NH

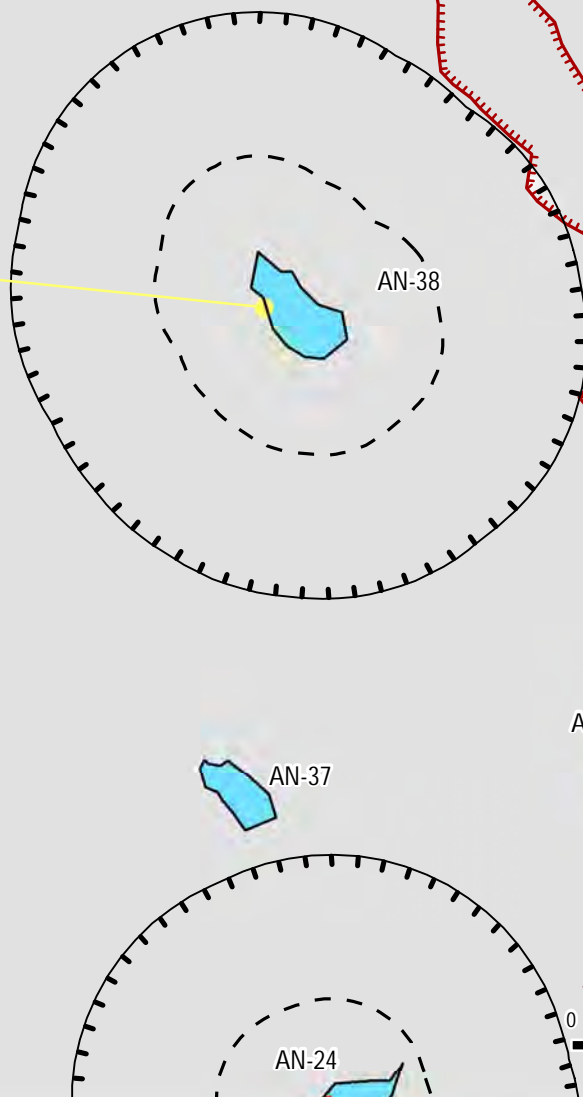
Figure 2 Vernal Pool Habitat Map Habitat A

Produced by: CTRC

1/25/2012

| | Vernal Pool Envelope (ac.) | Proposed Disturbance Area (ac.) | % alteration |
|------|---------------------------------------|---------------------------------|--------------|
| VP 7 | 1.5 | 0 | 0.0% |
| | Vernal Pool Terrestrial Habitat (ac.) | Proposed Disturbance Area (ac.) | % alteration |
| | 4.9 | 0.02 | 0.4% |

Potential Vernal Pool 7



AN-6

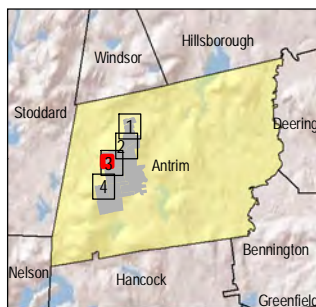
AN-37

AN-38

AN-24



0 100 200 400
Feet



Legend



Proposed WTG Location



Proposed Disturbance Area



Vernal Pool



Potential Vernal Pool



Vernal Pool Envelope (100')



Vernal Pool Terrestrial Habitat (250')



Wetlands



Wetland Boundary



Perennial Stream



Intermittent Stream



Drainage



Stream Label Wetland Label



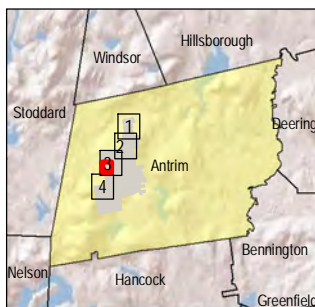
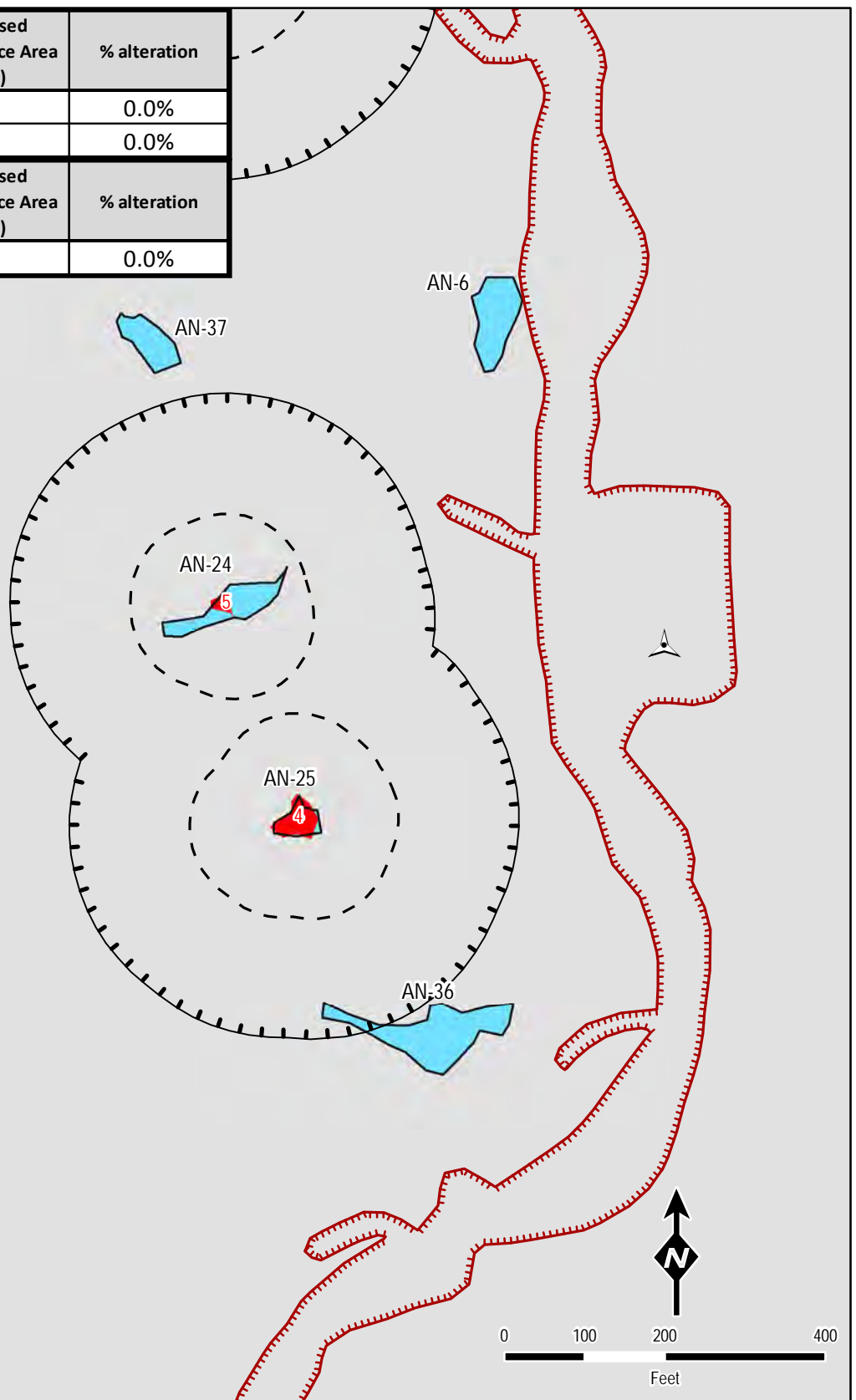
**ANTRIM WIND
ENERGY PROJECT**
ANTRIM, NH

Figure 2
Vernal Pool Habitat Map
Habitat B

Produced by: **CTRC**

1/25/2012

| | Vernal Pool Envelope (ac.) | Proposed Disturbance Area (ac.) | % alteration |
|------|---------------------------------------|---------------------------------|--------------|
| VP 4 | 1.1 | 0 | 0.0% |
| VP 5 | 0.9 | 0 | 0.0% |
| | Vernal Pool Terrestrial Habitat (ac.) | Proposed Disturbance Area (ac.) | % alteration |
| | 6.5 | 0 | 0.0% |



Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Potential Vernal Pool
- Vernal Pool Envelope (100')
- Vernal Pool Terrestrial Habitat (250')
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label



**ANTRIM WIND
ENERGY PROJECT**
ANTRIM, NH
Figure 2
Vernal Pool Habitat Map
Habitat C

Produced by: CTRC

1/25/2012

5.0 REFERENCES

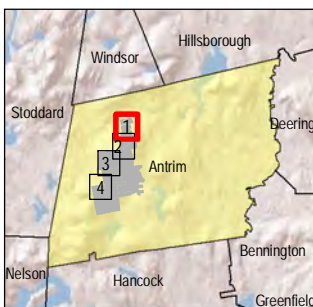
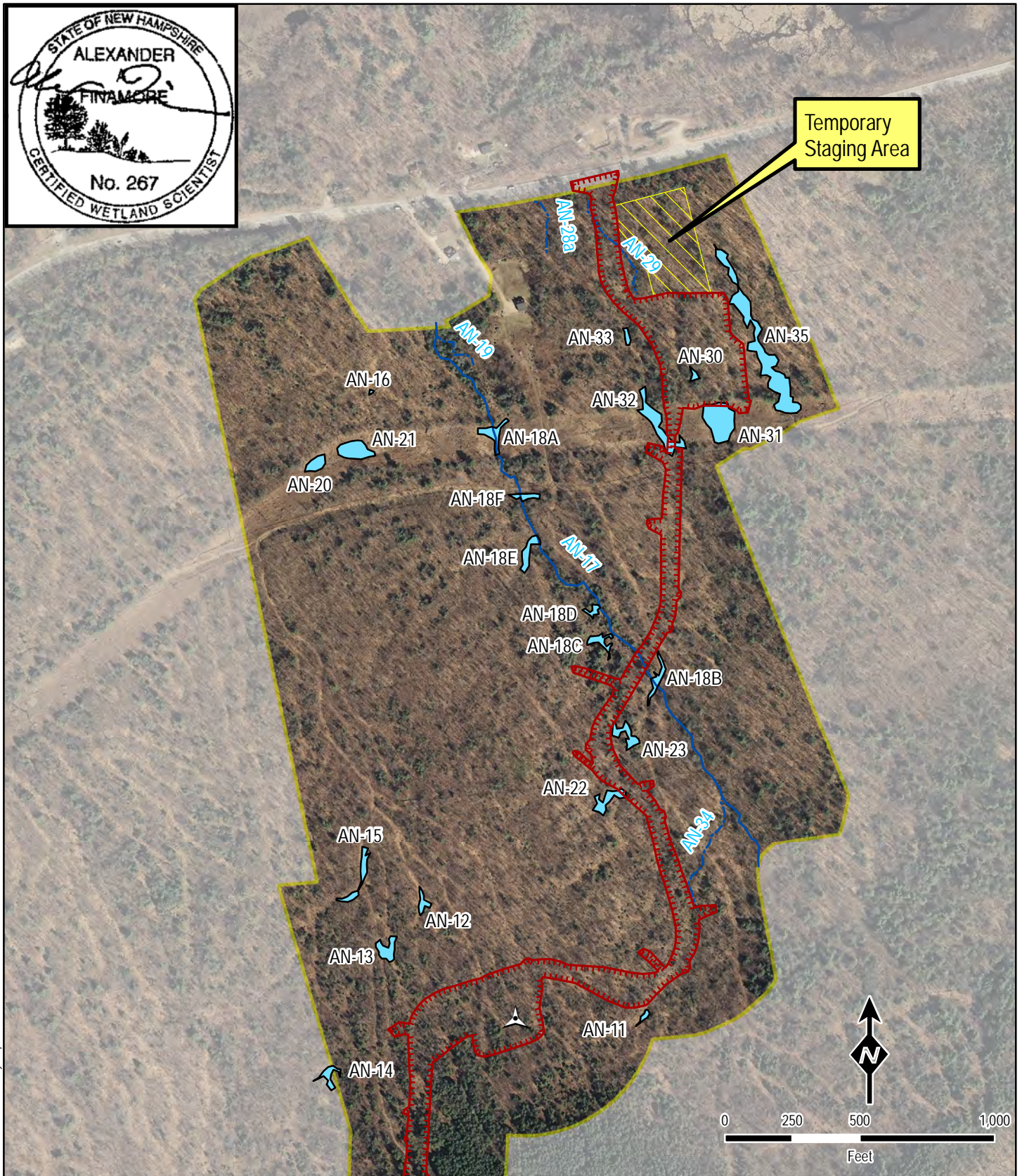
- Calhoun, A. J. K. and P. deMaynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.
- Calhoun, A. J. K. and M. W. Klemens. 2002. Best development practice: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservations Society, Bronx, New York.
- Identification and Documentation of Vernal Pools in New Hampshire. Anne Tappan, Ed. NH Fish & Game Department, Nongame and Endangered Wildlife Program. 1997.
- Maine Amphibians and Reptiles. Malcolm J. Hunter, Aram J.K. Calhoun, & Mark McCollough, Ed. University of Maine Press. 1999.

APPENDIX A

Natural Resource Survey Map



Temporary
Staging Area



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | Stream Label |
| | Resource Survey Area | | Wetland Label |



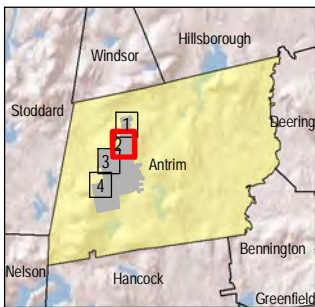
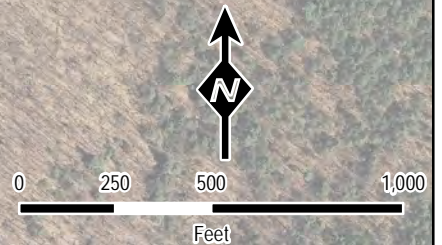
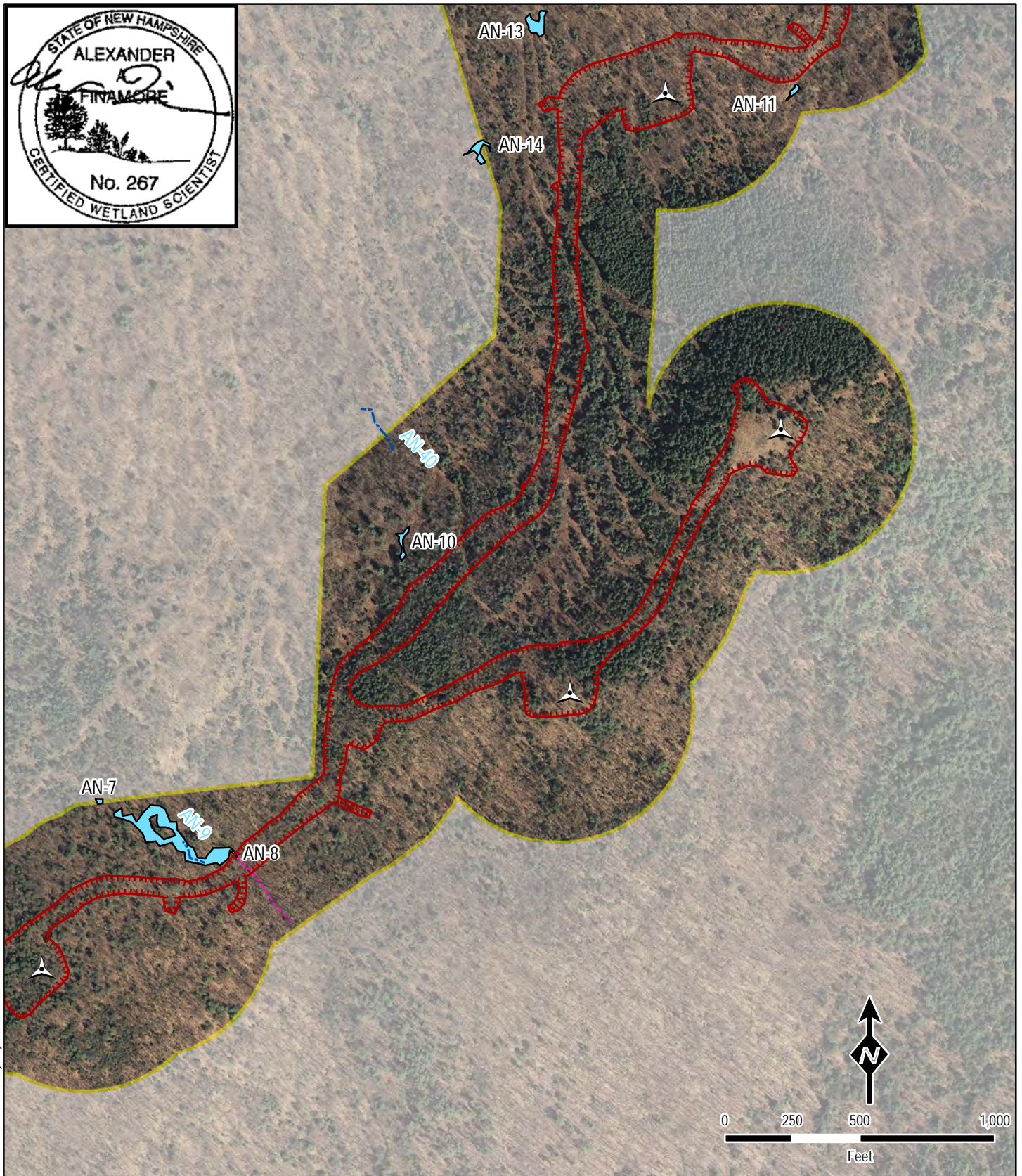
ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Appendix A

Natural Resource Survey Map
Map 1 of 4

Produced by: CTRC

1/25/2012



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | Stream Label |
| | Resource Survey Area | | Wetland Label |

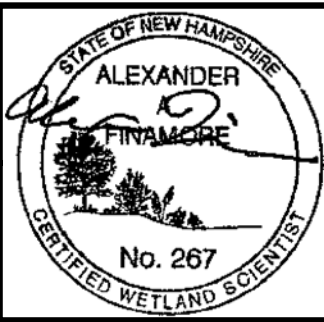


ANTRIM WIND ENERGY PROJECT ANTRIM, NH

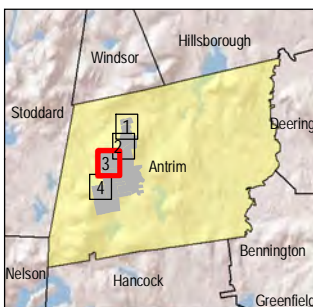
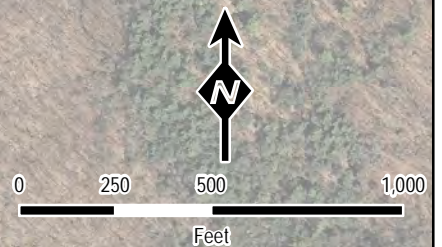
Appendix A Natural Resource Survey Map Map 2 of 4

Produced by: CTRC

1/25/2012



Potential Vernal Pool 7



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | Stream Label |
| | Resource Survey Area | | Wetland Label |



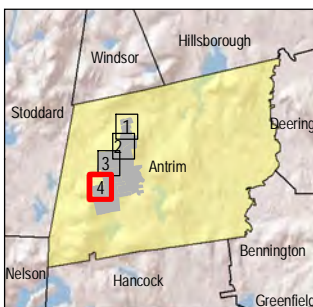
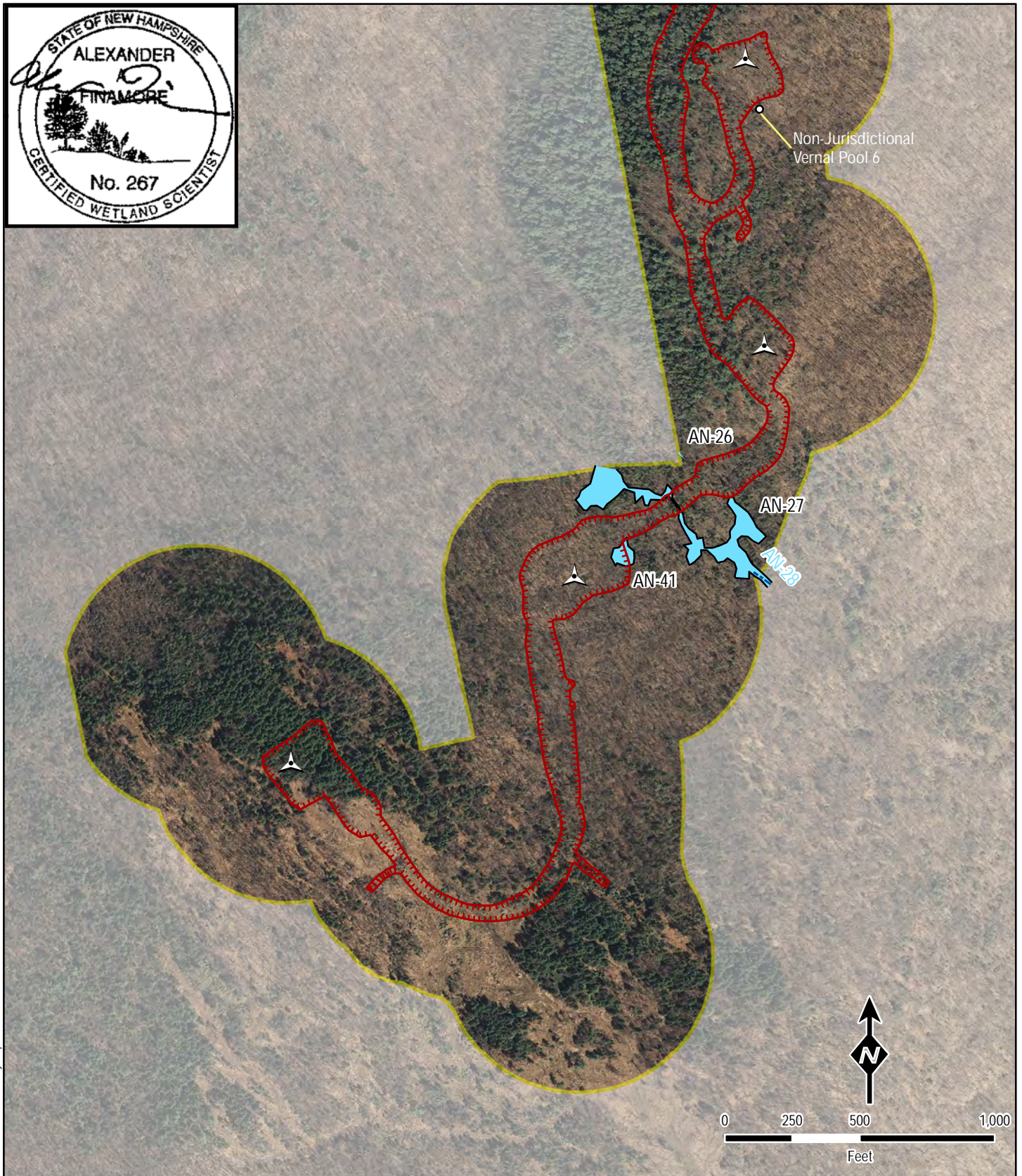
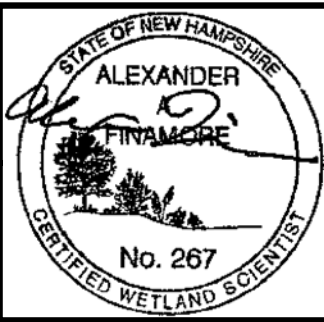
ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Appendix A

Natural Resource Survey Map
Map 3 of 4

Produced by: CTRC

1/25/2012



Legend

- | | | | |
|--|---------------------------|--|---------------------|
| | Proposed WTG Location | | Wetland Boundary |
| | Proposed Disturbance Area | | Perennial Stream |
| | Vernal Pool | | Intermittent Stream |
| | Potential Vernal Pool | | Drainage |
| | Wetlands | | |
| | Resource Survey Area | | Stream Label |
| | | | Wetland Label |



ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Appendix A

Natural Resource Survey Map
Map 4 of 4

Produced by: CTRC

1/25/2012

APPENDIX B

Vernal Pool Field Data Forms & Vernal Pool Site Photographs

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

VP-1

Observer's name Jim Bolduc & Alex Farnsworth Phone number (207) 879-1930 EXT 143

Address 400 Southborough Drive South Portland, ME

Location of pool Tuttle Hill Anttrim, NH

GPS (if available): Latitude N 43° 03.454 Longitude W 072° 01.082 Datum _____

Photos attached 2 pool 1 animals

Date: 5/2/11 Time start 2:10 Time end 2:45

Weather overcast 60°F Pool size 20' x 50' Water depth 2-8
Pond = 14°C ☐ measured ☒ estimated

| SPECIES | Spotted Salam | Wood frog | Green frog | | | | |
|-----------------|---------------|-----------|------------|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | 1 | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 8 masses | 5 masses | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

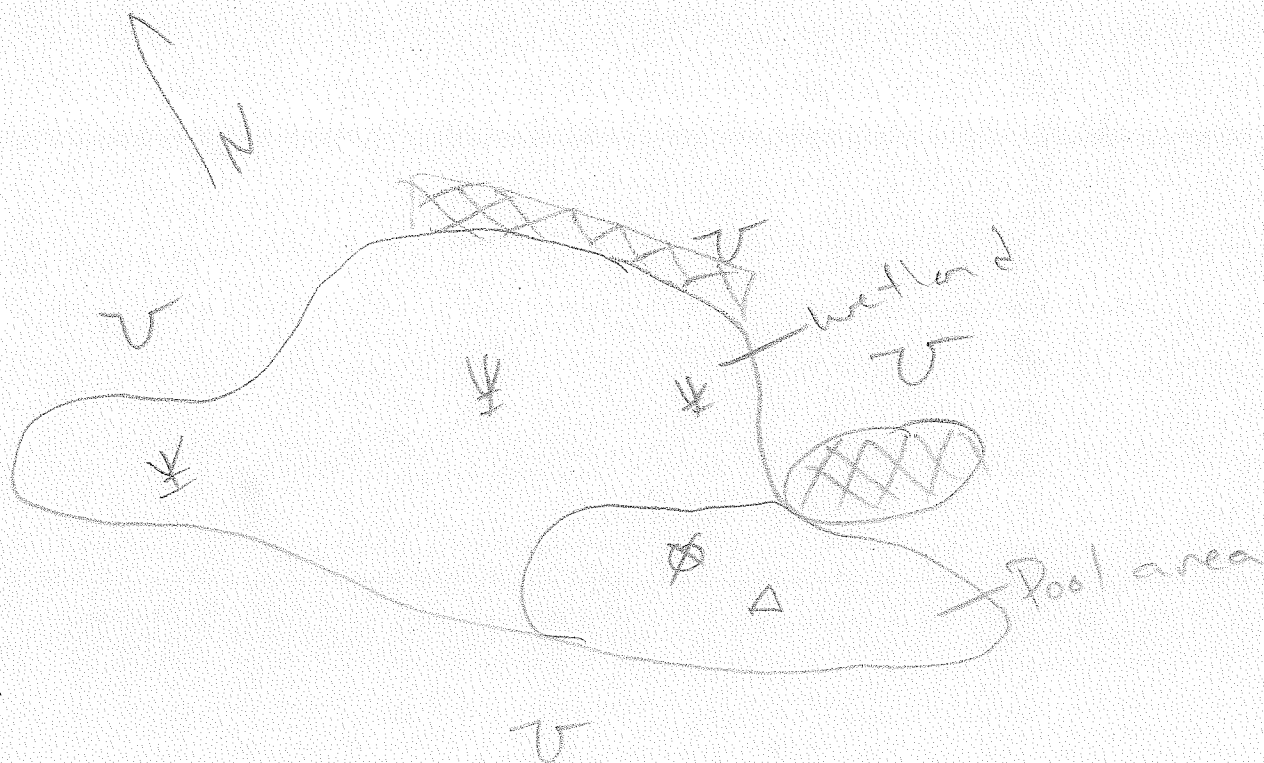
Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Use the back of the sheet for sketch/field map of the pool.



⊗ - WF

△ - SS

⊗ - ledge

VP-1

VP-1

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location Tuttle Hill, Andover, NH Observer JB + AP

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
☐ bottomland-isolated (pool in a floodplain, not in a wetland)
☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)

HABITAT: (estimate % of type)

- 50% woodland (specify type) ☐ deciduous ☐ coniferous ☒ mixed
☐ agriculture or open fields
☐ gravel pit
☐ residential
☐ roadside
☒ other shrubland

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
☐ moderate overstory, <50% shrubs and/or trees
☐ open site with grasses, forbs, scattered shrubs

COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- 20% shrubs
☐ emergent vegetation (i.e. grass, cattails)
few branches, twigs (in pool or overhanging into water)
☐ submergent vegetation
80% sphagnum moss
☐ other

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
☐ mud/soft sediment
☒ leaf litter 90%
☐ submergent vegetation
☐ emergent vegetation

DOMINANT PLANTS, LIST: (optional)

Ace rub, vac cor, Black spruce
Sphagnum, car sp., Osm cin

COMMENTS:

Pit + mound surrounded by mossy wetland
w/ eggs mature

Attach location documentation.

Photo 1 - South
Photo 2 - West
Photo 3 - Spotted
Photo 4 - Wood frog

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
 ☐ photos included
- ☐ dry, drying pool visit
 ☐ photos included
- ☒ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
 ☐ tax assessors map
 ☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☒ wood frog
- ☐ chorus
- ☐ amplexus
- ☒ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☒ spermatophores
- ☐ egg mass
- ☐ larvae
- ☒ Photos of indicator species
- ☒ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish
 and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name Jim Bolduc & Alex Finamore

Address 400 Southborough Drive

South Portland, ME 04106

Phone number (207) 879-1930 EXT 143

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP1



VP1 wood frog eggs



VP1 spotted salamander eggs



VP1



VP1 second visit June 2011



VP1 second visit June 2011

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

Observer's name JB + AF Phone number _____

Address _____

Location of pool Tottle Hill Antrum

~~ADP83~~ GPS (if available): Latitude 43 03.436 Longitude 76 01.200 Datum NAD83

Photos attached 2 pool 2 animals

Date: 5-5-2011 Time start 11:30 Time end _____

Weather Scattered Showers Pool size 20 x 40 Water depth 9"

☐ measured ☒ estimated

Water Temp
90C

| SPECIES | WFE | SS | | | | | |
|-----------------|-----|----|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 1 | 16 | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Use the back of the sheet for sketch/field map of the pool.

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location Tuttle Hill, AntirionObserver JB + AF

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
☐ bottomland-isolated (pool in a floodplain, not in a wetland)
☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)

Isolated Red maple Swamp (very small)

HABITAT: (estimate % of type)

- 100 ~~100~~ ☒ woodland (specify type) ☐ deciduous ☐ coniferous ☒ mixed
☐ agriculture or open fields
☐ gravel pit
☐ residential
☐ roadside
☐ other

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
☐ moderate overstory, <50% shrubs and/or trees
☐ open site with grasses, forbs, scattered shrubs

COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- 15 ~~15~~ ☐ shrubs
25 ~~25~~ ☐ emergent vegetation (i.e. grass, cattails)
25 ~~25~~ ☐ branches, twigs (in pool or overhanging into water)
20 ~~20~~ ☐ submergent vegetation
20 ~~20~~ ☐ sphagnum moss
☐ other

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
☐ mud/soft sediment
100 ~~100~~ ☐ leaf litter
☐ submergent vegetation
☐ emergent vegetation

DOMINANT PLANTS, LIST: (optional)

Ace rub, Vase cor, sp. lat

COMMENTS:

Isolated pool in pocket of ledge near Top of mt.

Attach location documentation.

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
 ☐ photos included
- ☐ dry, drying pool visit
 ☐ photos included
- ☒ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
 ☐ tax assessors map
 ☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☒ wood frog
- ☐ chorus
- ☐ amplexus
- ☒ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☐ spermatophores
- ☒ egg mass
- ☐ larvae
- ☒ Photos of indicator species (4)
- ☐ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish
 and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name Jim Bolduc + Alex Finamore

Address _____

Phone number _____

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP2 wood frog eggs



VP2 spotted salamander eggs



VP2



VP2



VP2 second visit June 2011

VP-3

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

Observer's name JB + AF Phone number _____

Address _____

Location of pool Tottle Hill - Antrim

GPS (if available): Latitude 43° 03.414 Longitude 72° 01.202 Datum NAD 83

Photos attached 2 pool 2 animals

Date: 5-5-2011 Time start 12:00 Time end 12:40

Weather Scattered Showers 55° Pool size 40 x 50 Water depth 8"

☐ measured ☒ estimated

12-Aug-11

Water temp 10°C

| SPECIES | WF | SS | Red Newt | | | | |
|-----------------|----|----|----------|--|--|--|--|
| adult | | | 1 | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 5 | 9 | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

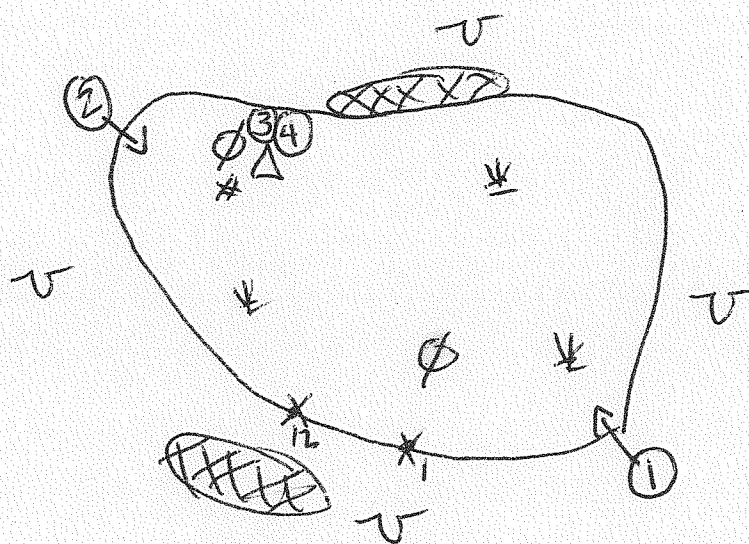
| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Use the back of the sheet for sketch/field map of the pool.

VP-3

Flags 1-12



∅ = SS

△ = WF

- Red Nant

⊗ = ledge outcrop

① Photo location (+ direction)
↓

VP-3

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location ToHle Hill - Andrim Observer JB + AF

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
 - ☐ bottomland-isolated (pool in a floodplain, not in a wetland)
 - ☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)
- isolated + small

HABITAT: (estimate % of type)

- 100 woodland (specify type) ☐ deciduous ☐ coniferous ☒ mixed
- ☐ agriculture or open fields
- ☐ gravel pit
- ☐ residential
- ☐ roadside
- ☐ other

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
- ☐ moderate overstory, <50% shrubs and/or trees
- ☐ open site with grasses, forbs, scattered shrubs


COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- 15 shrubs
- 50 emergent vegetation (i.e. grass, cattails)
- 10 branches, twigs (in pool or overhanging into water)
- ☐ submergent vegetation
- 20 sphagnum moss
- ☐ other

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
- ☐ mud/soft sediment
- 50 leaf litter
- ☐ submergent vegetation
- 50 emergent vegetation

DOMINANT PLANTS, LIST: (optional)

COMMENTS:  Isolated pool in ledge pocket near summit (Turbine 4)

Attach location documentation (Ace rub, Sci cyp, Sphagnum, Spi lat, car sp.)
Vac cor

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
 ☒ photos included
- ☐ dry, drying pool visit
 ☐ photos included
- ☐ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
 ☐ tax assessors map
 ☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☒ wood frog
- ☐ chorus
- ☐ amplexus
- ☒ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☐ spermatophores
- ☒ egg mass
- ☐ larvae
- ☒ Photos of indicator species
- ☐ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name Jim Bolduc + Alex Finamore

Address _____

Phone number _____

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP3 wood frog eggs



VP3 spotted salamander eggs



VP3



VP3



VP3 second visit June 2011

VP-4
Flags 1-10

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

Observer's name JR + AF Phone number _____

Address _____

Location of pool Between Title Hill + Willard Mnt. - Antrim

GPS (if available): Latitude 43° 03.127 Longitude 72° 01.310 Datum NAD83

Photos attached 2 pool 2 animals

Date: 5-5 Time start 8:15 Time end 2:15

Weather Partly cloudy 55° Pool size 50x40 Water depth 16"
☐ measured ☒ estimated

water temp
10°C

| SPECIES | WF | SS | | | | | |
|-----------------|----|----|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 4 | 55 | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

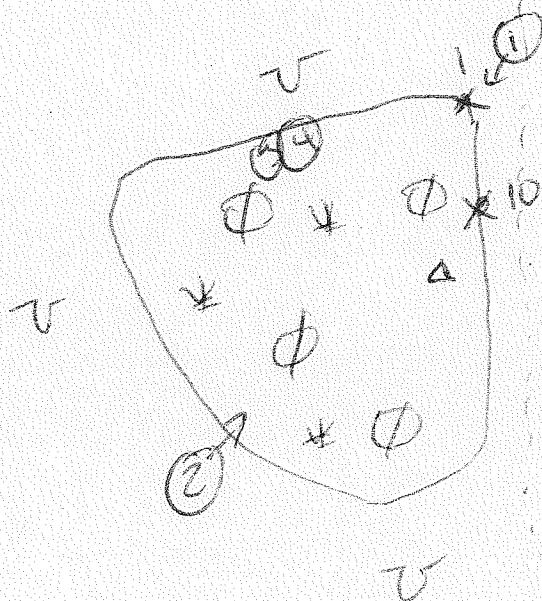
Comments: _____

Use the back of the sheet for sketch/field map of the pool.



VP-4
Flags 1-16

← ATU trail



⊗ = SS

△ = WF

* = wetland

u = upland

① Photo location (w/ direction)
↓

VP-4

VP-4

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location Between Tottle Hill + W. Wood rd

Observer JB + AF

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
☐ bottomland-isolated (pool in a floodplain, not in a wetland)
☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)

Hemlock swamp

HABITAT: (estimate % of type)

- 100 woodland (specify type) ☐ deciduous ☐ coniferous ☒ mixed
☐ agriculture or open fields
☐ gravel pit
☐ residential
☐ roadside
☐ other

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
☐ moderate overstory, <50% shrubs and/or trees
☐ open site with grasses, forbs, scattered shrubs

(Hemlock)

COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- 5 shrubs
5 emergent vegetation (i.e. grass, cattails)
40 branches, twigs (in pool or overhanging into water)
☐ submergent vegetation
☐ sphagnum moss
☐ other

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
☐ mud/soft sediment
100 leaf litter
☐ submergent vegetation
☐ emergent vegetation

DOMINANT PLANTS, LIST: (optional)

Ace rub, Tso can, Osmcin

COMMENTS:

Adjacent to ATV trail

Attach location documentation.

VP-4

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
☒ photos included (x 4)
- ☐ dry, drying pool visit
☐ photos included
- ☐ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
☐ tax assessors map
☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☒ wood frog
- ☐ chorus
- ☐ amplexus
- ☒ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☐ spermatophores
- ☒ egg mass
- ☐ larvae
- ☒ Photos of indicator species
- ☐ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name Jim Bolduc + Alex Finamore

Address _____

Phone number _____

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP4 spotted salamander eggs



VP4 spotted salamander eggs



VP4



VP4



VP4 second visit June 2011

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

VP-5

5-flags

Observer's name JB-AF Phone number _____

Address _____

Location of pool Between Tuttle Hill & Willard Mt

GPS (if available): Latitude 43° 03.169 Longitude 72° 01.319 Datum NAD 83

Photos attached 2 pool 1 animals

Date: 5-9-2011 Time start 9:00 Time end 9:25

Weather Sunny ~60° Pool size 15x25 Water depth 6"
☐ measured ☒ estimated

Water temp 10°C

| SPECIES | SS | | | | | | |
|-----------------|----|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 10 | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

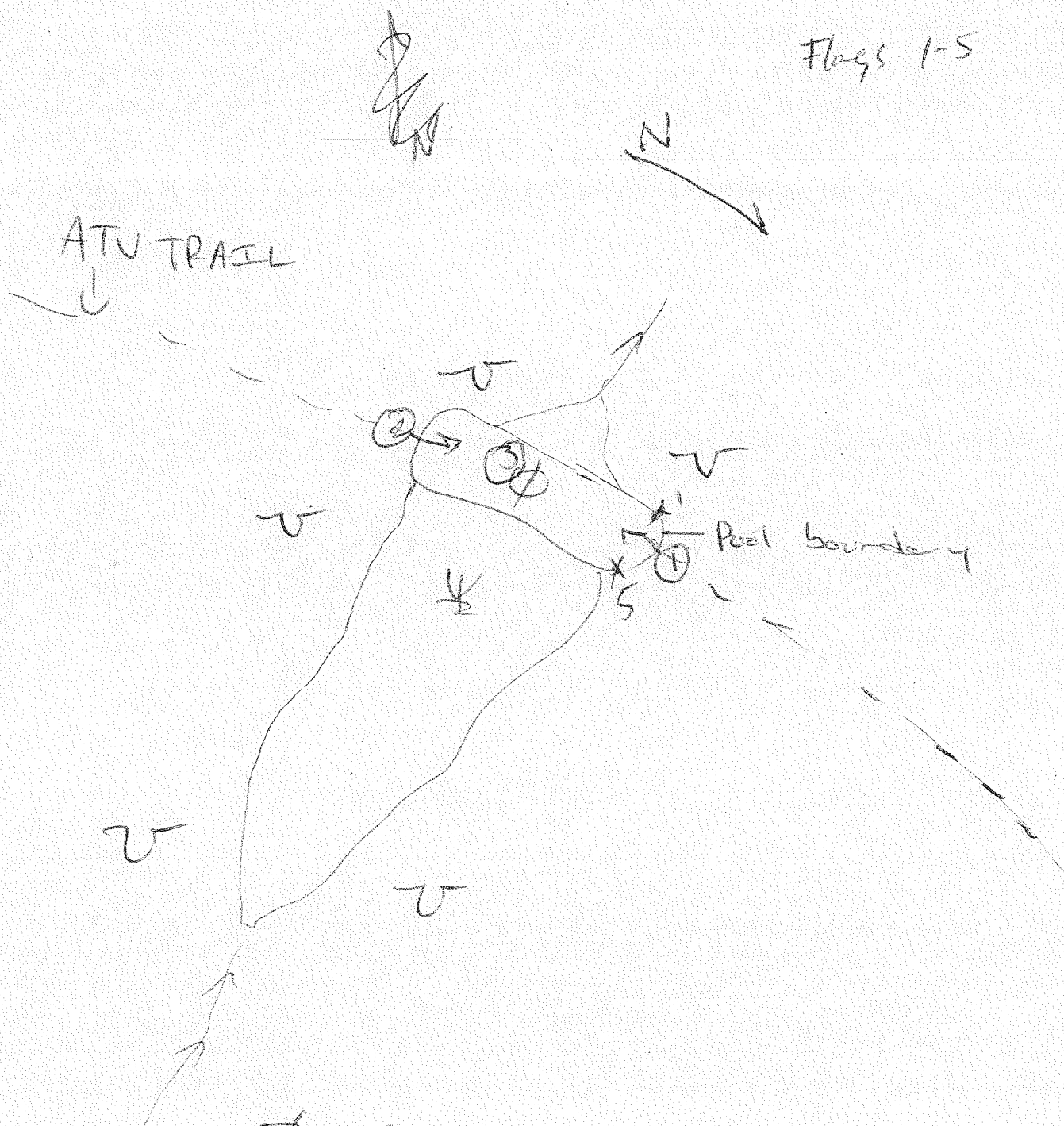
| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Use the back of the sheet for sketch/field map of the pool.

VP-5

Flags 1-5



⊘ - ss eggs

① photo location + direction

VP-5

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location Between Tottle Hill + wetland Observer JB + AF

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
- ☐ bottomland-isolated (pool in a floodplain, not in a wetland)
- ☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)

Seep

HABITAT: (estimate % of type)

- 100 woodland (specify type) ☐ deciduous ☐ coniferous ☒ mixed
- ☐ agriculture or open fields
- ☐ gravel pit
- ☐ residential
- ☐ roadside
- ☐ other _____

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
- ☐ moderate overstory, <50% shrubs and/or trees
- ☐ open site with grasses, forbs, scattered shrubs

COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- ☐ shrubs
- ☐ emergent vegetation (i.e. grass, cattails)
- 10 branches, twigs (in pool or overhanging into water)
- ☐ submergent vegetation
- ☐ sphagnum moss
- ☐ other _____

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
- ☐ mud/soft sediment
- 100 leaf litter
- ☐ submergent vegetation
- ☐ emergent vegetation

DOMINANT PLANTS, LIST: (optional)

COMMENTS: In ATV trail where wetland Seep crosses

Attach location documentation.

VP-5

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
☒ photos included
- ☐ dry, drying pool visit
☐ photos included
- ☐ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
☐ tax assessors map
☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☐ wood frog
- ☐ chorus
- ☐ amplexus
- ☐ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☐ spermatophores
- ☒ egg mass
- ☐ larvae
- ☒ Photos of indicator species
- ☐ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name Jim Bolduc + Alex Finamore

Address _____

Phone number _____

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP5 spotted salamander eggs



VP5



VP5



VP5 second visit June 2011

VERNAL POOL DOCUMENTATION (PART 1 OF 2)

VP-6
Rugs 1-3

Observer's name SB+ AF Phone number _____

Address _____

Location of pool Willard mt

GPS (if available): Latitude 43° 02.870 Longitude 72° 01.279 Datum NAD83

Photos attached 2 pool 1 animals

Date: 5-9-11 Time start 10:15 Time end 10:25

Weather Sunny ~ 65° Pool size 10 x 20 Water depth 5"

☐ measured ☒ estimated

water temp
13°C

| SPECIES | SS | | | | | | |
|-----------------|----|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | 9 | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: In old relic farm rd.

Date: _____ Time start _____ Time end _____

Weather _____ Pool size _____ Water depth _____

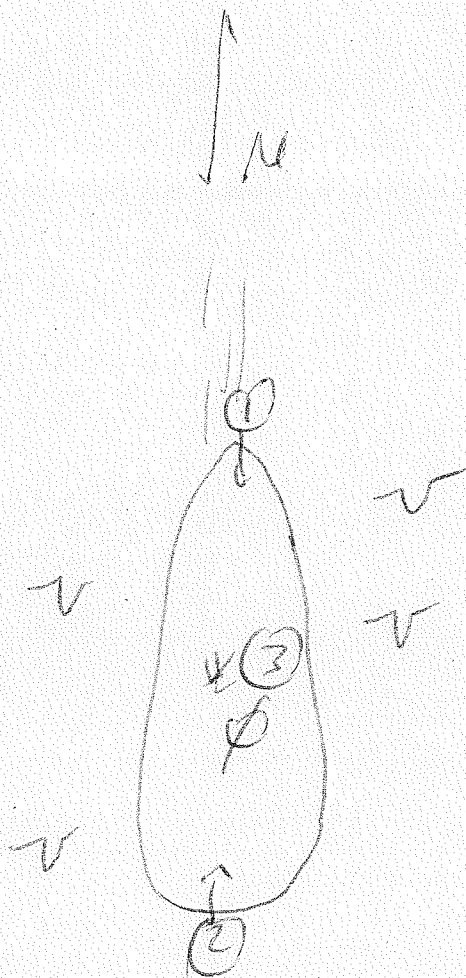
| SPECIES | | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| adult | | | | | | | |
| vocalization | | | | | | | |
| amplexus | | | | | | | |
| courtship | | | | | | | |
| spermatophores | | | | | | | |
| eggs | | | | | | | |
| tadpoles/larvae | | | | | | | |
| juveniles | | | | | | | |

Comments: _____

Use the back of the sheet for sketch/field map of the pool.

VP-6

Flays 1-5



$\phi = SS \text{ eqn}$

① = Pic
↓

← old farm road

VERNAL POOL HABITAT DOCUMENTATION (Part 2 of 2)

Pool Location willow mudObserver JP + AF

SITE/ TYPE:

- ☐ upland-isolated (pool not associated with a wetland)
☐ bottomland-isolated (pool in a floodplain, not in a wetland)
☒ wetland complex (pool within or associated with a larger wetland habitat, i.e. red maple swamp, marsh, pond edge, other)

Isolated w/in old farm rd

HABITAT: (estimate % of type)

- ☒ woodland (specify type) ☒ deciduous ☐ coniferous ☐ mixed
☐ agriculture or open fields
☐ gravel pit
☐ residential
☐ roadside
☐ other _____

OVERSTORY:

- ☒ heavy overstory, >50% shrubs and/or trees
☐ moderate overstory, <50% shrubs and/or trees
☐ open site with grasses, forbs, scattered shrubs

COVER: Any material in the pool that can provide egg attachment sites and offer concealment to aquatic adults and/or developing arvae (estimate % of type).

- ☐ shrubs
☐ emergent vegetation (i.e. grass, cattails)
☒ branches, twigs (in pool or overhanging into water)
☐ submergent vegetation
☐ sphagnum moss
☐ other _____

BOTTOM: (estimate % of types composing bottom surface)

- ☐ sand
☐ mud/soft sediment
☒ leaf litter
☐ submergent vegetation
☐ emergent vegetation

DOMINANT PLANTS, LIST: (optional)

Frag gra

COMMENTS:

Attach location documentation.

VERNAL POOL DOCUMENTATION COVER SHEET

Include with documentation for each vernal pool.

- ☒ flooded pool visit
☒ photos included
- ☐ dry, drying pool visit
☐ photos included
- ☐ field map of pool
- ☐ written directions to pool
- ☐ USGS map, photo copy
- ☐ ONE of the following, indicating pool location:
☐ tax assessors map
☐ detailed location information
- ☒ Evidence of vernal pool indicator species (check all present):
- ☐ fairy shrimp
- ☐ wood frog
- ☐ chorus
- ☐ amplexus
- ☐ egg mass
- ☐ tadpoles
- ☒ salamander (spotted, Jefferson, blue-spotted)
- ☐ courtship
- ☒ spermatophores
- ☒ egg mass
- ☐ larvae
- ☒ Photos of indicator species
- ☐ Documentation forms and maps submitted to both:
- ☐ town conservation commission
- ☐ Nongame and Endangered Wildlife Program, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301

Reporter's name _____

Address _____

Phone number _____

Thank you for participating in the vital process of protecting the resources of your community and the state.



VP6



VP6 spotted salamander eggs



VP7



VP7

EXHIBIT 7

USACE NH PROGRAMMATIC PERMIT APPENDIX B

**U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

| 1. Impaired Waters | Yes | No |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----|
| 1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.* | | X |
| 2. Wetlands | Yes | No |
| 2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work? | X | |
| 2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book Natural Community Systems of New Hampshire . | | X |
| 2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage? | X | |
| 2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.) | X | |
| 2.5 The overall project site is more than 40 acres. | X | |
| 2.6 What is the size of the existing impervious surface area? | 0 sq. ft. | |
| 2.7 What is the size of the proposed impervious surface area? | 500,940 sq. ft. | |
| 2.8 What is the % of the impervious area (new and existing) to the overall project site? | 0.16% | |
| 3. Wildlife | Yes | No |
| 3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.) | | X |
| 3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. | X | |
| 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)? | X | |
| 3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development? | | X |
| 3.5 Are stream crossings designed in accordance with the PGP, GC 21? | X | |

| 4. <u>Flooding/Floodplain Values</u> | Yes | No |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream? | | X |
| 4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage? | | |
| 5. <u>Historic/Archaeological Resources</u> | | |
| If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP? | X | |

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

EXHIBIT 8
CONSTRUCTION SEQUENCE

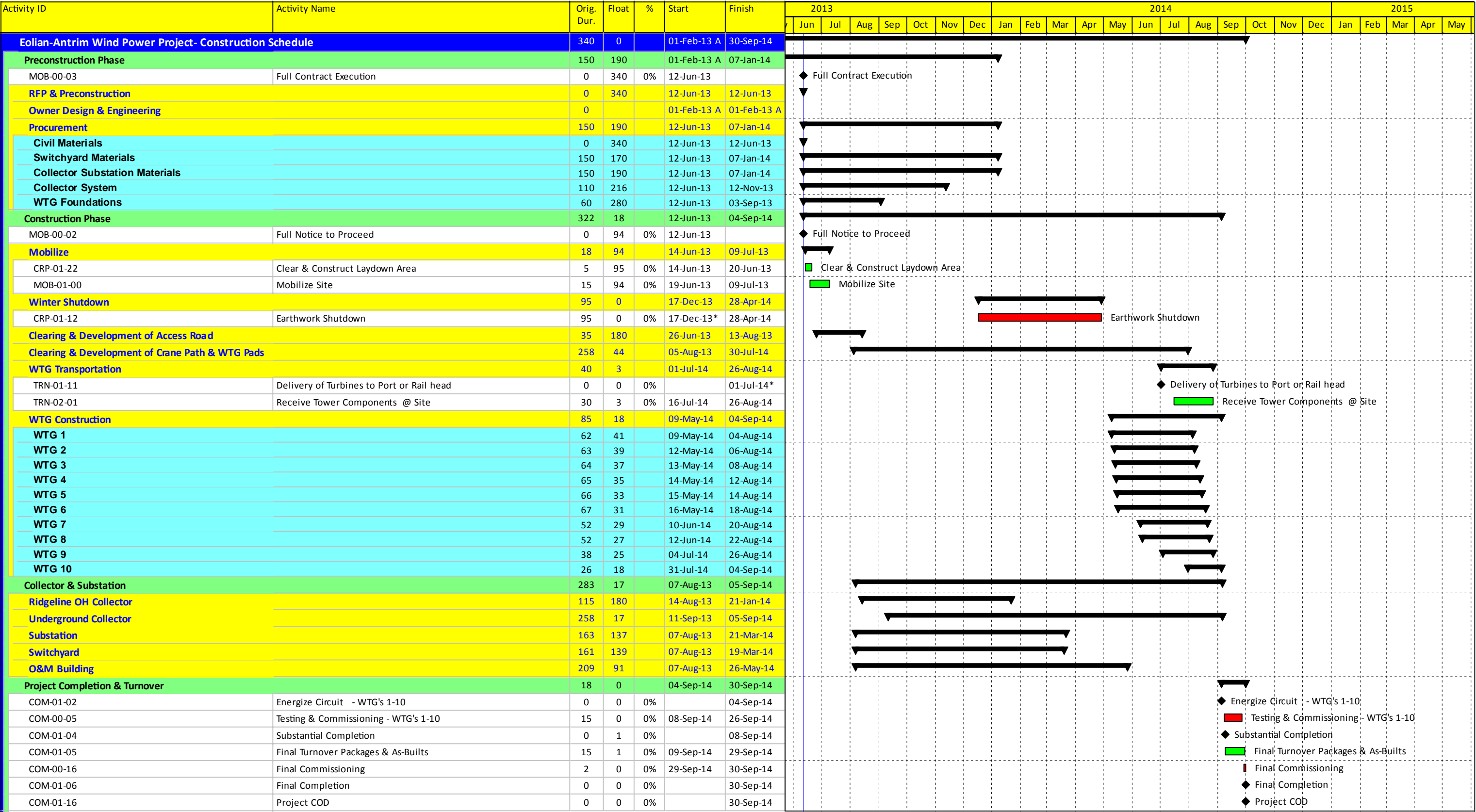


EXHIBIT 9

RESPONSE TO ENV-WT 904.01 GENERAL DESIGN CONSIDERATIONS

PART Env-Wt 904: DESIGN AND CONSTRUCTION OF STREAM CROSSINGS

Response to Env-Wt 904.01: General Design Considerations

Stream Crossing at STA. 18+75

This stream crossing was designed in accordance with the “New Hampshire Stream Crossing Guidelines – May 2009”. The proposed culvert is an open bottom concrete box culvert with a width of 10 feet. The 10-foot width will allow construction of the culvert beyond the top-of-bank of the stream, leaving the channel undisturbed. As such, the applicable requirements of Env-Wt 904.01 General Design Considerations are met. Please note that Env-Wt 904.01(f) does not apply.

As a Tier One Stream Crossing (contributing area is approximately 106 acres), the requirements of Env-Wt 904.02 also apply. The contributing watershed is less than 200 acres. Based on the stormwater model, the culvert passes the 50-year storm event. The crossing is designed with an open bottom box culvert. If construction involves any in-stream work, it will be limited to low flow conditions.

Stream Crossing at STA. 2+25

The proposed access road will cross an intermittent stream at approximately STA. 2+25. Because of project-specific roadway design requirements, compliance with sections Env-Wt 904.01 and 904.02 is not practicable. Therefore the applicant requests approval of an Alternative Design under section Env-Wt 904.09.

“Practicable” is defined in section Env-Wt 101.73 as “available and capable of being done after taking into consideration cost, existing technology, and logistics, in light of overall project purposes”.

A contractor with experience with this type of project was consulted throughout the design process. Considering the construction and delivery vehicles required for this project, the contractor recommended that roadway slopes greater than 12% be avoided. In order to comply with this recommendation and ensure safe access during construction, approximately ten feet of cut is required in the vicinity of the stream crossing. Damage to this stream is unavoidable and irreparable, and compliance with the above-referenced sections is not practicable.

EXHIBIT 10
PROPERTY INFORMATION

Antrim Wind Park Property Owners

| Last Name | First Name | Map | Lot(s) | Address 1 | Address 2 | Town | State | Zip Code |
|-------------------------------------------|----------------------------|-----|---------------|-----------------------|--------------|---------|-------|----------|
| Ott | Mike | 212 | 027; 030; 034 | 354 Keene Road | P.O. Box 160 | Antrim | NH | 04330 |
| Whittemore | Paul J. | 236 | 002 | 15 Dartmouth Drive | P.O. Box 528 | Auburn | NH | 03032 |
| Cotran | Steven R. | 236 | 001 | 26 McIntosh Lane | | Bedford | NH | 03110 |
| c/o Charles Bean III | Antrim Limited Partnership | 235 | 014 | 477 Washington Street | | Norwood | MA | 02062 |
| Paul and Helen Whittemore, Trustees | Whittemore Trust | 239 | 001 | P.O. Box 528 | | Auburn | NH | 03032 |

ENV.

JACK KENWORTHY
EOLIAN RENEWABLE ENERGY LLC
155 FLEET ST
PORTSMOUTH NH
03801-4050

Doc # 1104944 Jan 26, 2011 12:13 PM
Book 8288 Page 0340 Page 1 of 9
Register of Deeds, Hillsborough County
Camela O. Caughlin

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 –
PAUL WHITTEMORE

EXHIBIT C
MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR

Paul and Helen Whittemore
c/o Paul Whittemore
P.O. Box 528
Auburn, NH 03032

LESSEE

Antrim Wind Energy LLC
c/o Eolian Renewable Energy
155 Fleet Street
Portsmouth, New Hampshire 03801

PREMISES:

Lessor is the owner of that certain real property described in Exhibit A attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as Exhibit B (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

TERM OF LEASE:

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

EXTENSION TERM:

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 – PAUL WHITTEMORE

DATED at AUBURN NH, _____ this 6 day of January, 2011.

By: Paul Whittemore
Name: Paul Whittemore
Its: Owner/Self

STATE OF NEW HAMPSHIRE

COUNTY OF ROCKINGHAM) ss.:

On this 6th day of January 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Paul Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

Denise M. Pease

DATED at Portsmouth, New Hampshire this 4 day of January 2011.

By: John Kenworthy
Name: John Kenworthy
Its: Manager



STATE OF NEW HAMPSHIRE

COUNTY OF ROCKINGHAM) ss.:

On this 4 day of January, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared John Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

Katrina Ricker
Notary Public



EXHIBIT A to Memorandum of Lease

0009937

2000 FEB 24 AM 9:22

W A R R A N T Y D E E D

KNOW ALL MEN BY THESE PRESENTS:

That I, MARVIN W. CUDDIHY, a/k/a Marvin Cuddihy, an
unremarried widow, of 19 Davisville Road, Wilton, in
the County of Hillsborough and State of New Hampshire,
for consideration paid,
grants to PAUL WHITTEMORE and CAROLE WHITTEMORE, husband and
wife, both of 29 Sagharbor Drive, Auburn, in the
County of Rockingham and the State of New Hampshire,
and HELEN WHITTEMORE, of P. O. Box 242, Antrim, in the
County of Hillsborough and State of New Hampshire, all
as joint tenants with rights of survivorship,
with WARRANTY covenants,

Two certain tracts or parcels of land with the buildings
thereon, if any, situated in Antrim, in the County of
Hillsborough and State of New Hampshire, bounded and described as
follows:

T R A C T I

Beginning at the Northeast corner of the tract at land now
or formerly of John B. Jameson; thence Westerly by said Jameson
land along the stone wall to land formerly of Helen C. Thayer;
thence Southerly along a stone wall adjoining land of said Thayer
to a stake and stones at land now or formerly of John B. Jameson;
thence Easterly along said Jameson land to stone wall at a corner
of land now or formerly of said Jameson and land now or formerly
of John Cuddihy; thence Northerly along land of said Cuddihy and
Jameson along stone wall to the point of beginning.

Containing thirty (30) acres, more or less, and being known
as the Nesmith Pasture.

| | | | |
|-----------------------------------------------|------------------|-----------------------------|--|
| STATE OF NEW HAMPSHIRE | | | |
| DEPARTMENT OF REVENUE ADMINISTRATION | | REAL ESTATE TRANSFER TAX | |
| ***** THOUSAND | 1 HUNDRED AND | 00 DOLLARS | |
| 02/24/2000 | 421757 | \$ *****600.00 | |
| VOID IF ALTERED | | | |

BK6211PG1465

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 –
PAUL WHITEMORE

The above premises are subject however to a right of way and privilege of roadway being built to land now or formerly of Helen C. Thayer or her heirs, executors or assigns, of thirty (30) feet in width at such point as possible for best construction, all as set forth in deed of Helen C. Thayer to John Cuddihy, dated August 6, 1914 and recorded in Volume 723, Page 336, of the Hillsborough County Registry of Deeds.

T R A C T II

Beginning at the Southwest corner of the premises at land now or formerly of one Harrington; thence Northerly by said Harrington land to land formerly of Alfred G. Holt, now or formerly of Arthur F. Holt and Gladys H. Warner; thence Easterly by land of said Holt-Warner to land now or formerly of Alvin Brown; thence Southerly by said Brown land and land formerly of James W. Jameson and of John Cuddihy to land now or formerly of R. B. Harrington; thence Westerly by said Harrington land to the place of beginning.

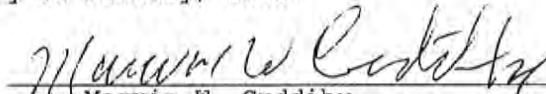
Containing one hundred ten (110) acres, more or less, and being known as the Mountain Pasture.

Meaning and intending to convey the same premises conveyed to Marvin Cuddihy and Sarah Cuddihy, as joint tenants with rights of survivorship, by deed of Alice E. Cuddihy, Mary I. Boynton and Matthew N. Cuddihy, dated October 12, 1965 and recorded in Volume 1853, Page 26, of the Hillsborough County Registry of Deeds. The said Sarah J. Cuddihy died on December 16, 1979 and her death certificate is to be recorded with the Hillsborough County Registry of Deeds. The grantor herein derives his title as surviving joint tenant.

This conveyance is made subject to Current Use Classification recorded in Volume 3696, Page 136, of the Hillsborough County Registry of Deeds.

And I, Marvin W. Cuddihy, and unremarried widow, release to said Grantees my rights of Homestead and other interests in said premises.

Dated this 14th day of January, 2000.


Marvin W. Cuddihy

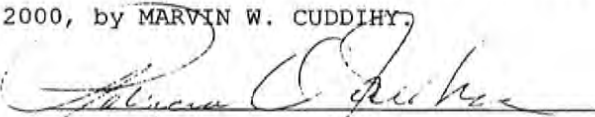
BK6211PG1466

ANTRIM WIND ENERGY LLC (ANTRIM, NH – TAX MAP #236 /PARCEL #002-000 –
PAUL WHITEMORE

STATE OF NEW HAMPSHIRE

County of Hillsborough

The foregoing instrument was acknowledged before me this
17th day of January, 2000, by MARVIN W. CUDDIHY.



Name Patricia A. Frachsen

Title President

My Commission Expires: 12/26/2000

BK6211PG1467

Doc # 1019268 Apr 29, 2010 2:41 PM
Book 8199 Page 0260 Page 1 of 3
Register of Deeds, Hillsborough County

Carmela O. Coughlin



#11 Blodgett, Makechnie & Lawrence

QUITCLAIM DEED

I, CAROLE WHITEMORE, single woman, of Auburn, County of Rockingham and State of New Hampshire, for consideration paid, grant to PAUL J. WHITEMORE, of 29 Sagharbor Drive (with a mailing address of P. O. Box 528), Town of Auburn, County of Rockingham and State of New Hampshire 03032-0528, and HELEN M. WHITEMORE, of Brimstone Corner Road (with a mailing address of P. O. Box 242), Town of Antrim, County of Hillsborough and State of New Hampshire 03440-0242, as joint tenants with rights of survivorship, with **QUITCLAIM covenants**, all my right, title and interest in

Two certain tracts or parcels of land, with the buildings thereon, if any, situate in the Town of **Antrim**, in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

Tract I

Beginning at the northeast corner of the tract at land now or formerly of John B. Jameson; thence running

WESTERLY by land of said Jameson along the stone wall to land formerly of Helen C. Thayer; thence running

SOUTHERLY by a stone wall adjoining land of said Thayer to a stake and stones at land now or formerly of John B. Jameson; thence running

EASTERLY by land of said Jameson to a stone wall at a corner of land now or formerly of said Jameson and land now or formerly of John Cuddihy; thence running

NORTHERLY by land of said Cuddihy and Jameson along a stone wall to the point of beginning.

Containing thirty (30) acres, more or less, and being known as the Nesmith Pasture.

The above premises are subject however to a right of way and privilege of roadway being built to land now or formerly of Helen C. Thayer or her heirs, executors or assigns, of thirty (30) feet in width at such point as possible for best construction, all as set forth in deed of Helen C. Thayer to John Cuddihy, dated August 6, 1914 and recorded in the Hillsborough County Registry of Deeds at Volume 723, Page 336.

Tract II

Beginning at the southwest corner of the premises at land now or formerly of one Harrington; thence running

NORTHERLY by land of said Harrington to land now or formerly of Arthur F. Holt and Gladys H. Warner; thence running

EASTERLY by land of said Holt-Warner to land now or formerly of Alvin Brown; thence running

SOUTHERLY by land of said Brown and land formerly of James W. Jameson and of John Cuddihy to land now or formerly of R. B. Harrington; thence running

WESTERLY by land of said Harrington to the place of beginning.

Containing one hundred ten (110) acres, more or less, and being known as the Mountain Pasture.

Meaning and intending to convey the grantor's interest in the premises conveyed to Paul Whittemore, Carole Whittemore and Helen Whittemore by deed of Marvin W. Cuddihy, dated January 14, 2000, recorded in the Hillsborough County Registry of Deeds at Book 6211, Page 1465.

The premises are conveyed subject to the notice of current use classification filed by the Town of Antrim in the Hillsborough County Registry of Deeds at Book 3696, Page 136.

This conveyance is exempt from the New Hampshire real estate transfer tax under the provisions of RSA 78-B:2,XIII as a transfer pursuant to a decree of divorce issued by the Merrimack Superior Court, Docket Number 07-M-0495 on July 10, 2007, and under the provisions of RSA 78-B:2,IX.

Signed this 21st day of April, 2009.


Carole Whittemore

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

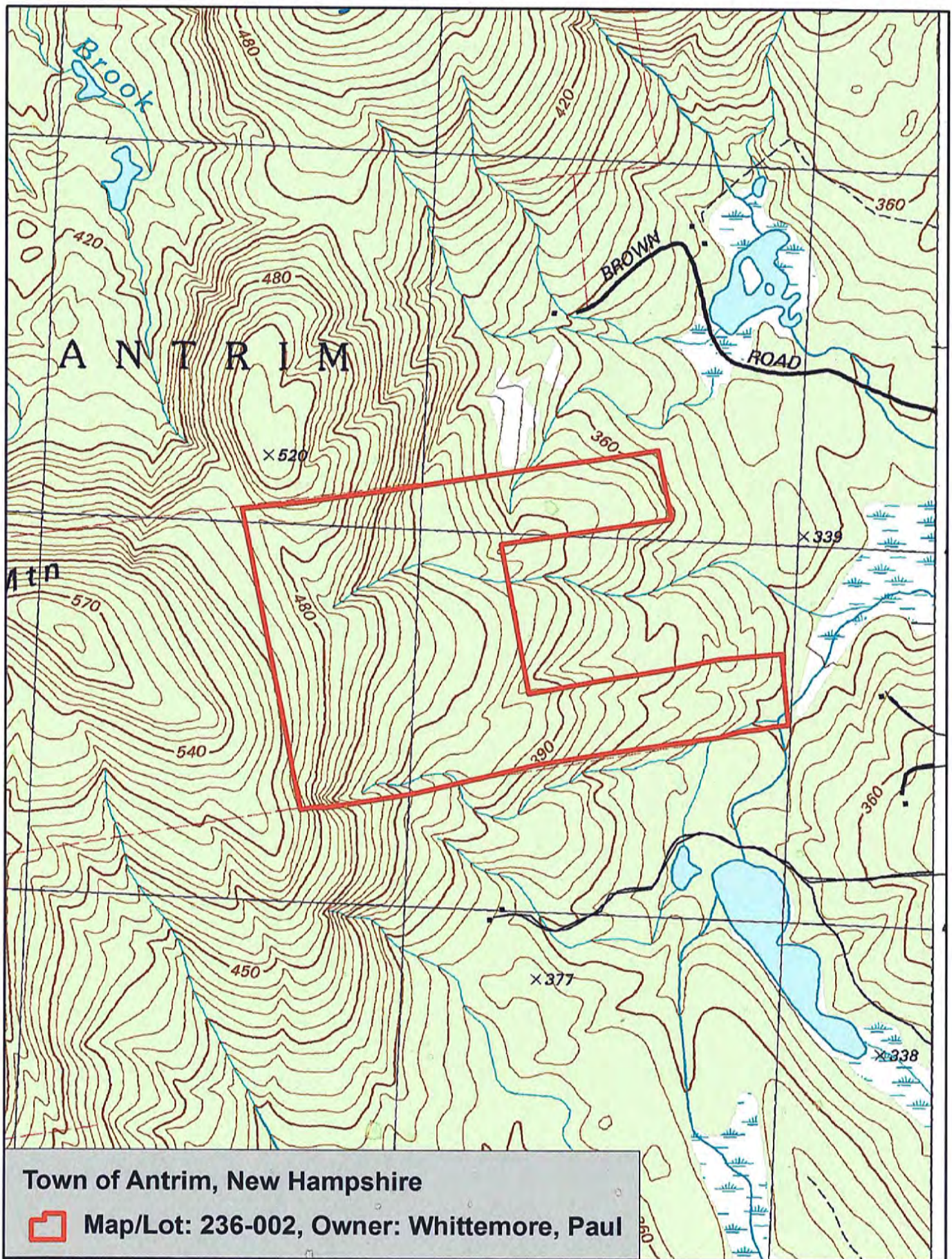
The foregoing instrument was acknowledged before me this 21 day
of April, 2009, by Carole Whittemore.


Notary Public/Justice of the Peace

CAROL A. THEOS 1/30/2013
Printed Name Expiration Date

CAROL A. THEOS, Justice of the Peace
My Commission Expires January 30, 2013





Town of Antrim, New Hampshire



Map/Lot: 236-002, Owner: Whittemore, Paul

ORIGINAL NOT SUITABLE FOR
PROPER REPRODUCTION

SHORT FORM OPTION AGREEMENT

Dr. Lyle J. Micheli and Mrs. Anne J. Micheli, whose mailing address is 319 Longwood Avenue, Boston, MA 02155 ("Grantor") and Antrim Wind Energy LLC a Delaware limited liability company having a mailing address at c/o Eolian Renewable Energy, LLC, 155 Fleet Street, Portsmouth, New Hampshire 03801 ("Grantee"), have entered into an option agreement dated September 8, 2011 (the "Option").

1. **Grant of Option.** For valuable consideration, Grantor has granted to Grantee the exclusive right and option to purchase an Easement encumbering the premises situated in the Town of Antrim, Hillsborough County, New Hampshire, being more particularly described in **Exhibit A** attached hereto (the "Property"), subject to the terms and conditions contained in this Option. The easement (the "Easement") shall be in the form attached hereto as **Exhibit B**.

2. **Expiration Date.** This Option shall expire two (2) years from the date hereof at 5:00 p.m. in the time zone in which the Property is located. For additional consideration, Grantee may postpone the expiration of this Option for an additional period of two (2) years.

3. **Exercise of Option.** This Option may be exercised by Grantee by giving written notice thereof to Grantor prior to the expiration of this Option.

4. **Easement.** Within thirty (30) days after the exercise of this Option, Grantor shall execute and deliver to Grantee an original of the Easement.

5. **Due Diligence Inspections.** Grantee, its agents, contractors, and subcontractors, may enter upon the Property at reasonable times prior to exercise of this Option, and prior to the granting of the Easement, in order to inspect the Property and/or to perform surveys and other physical inspections (collectively, the "Due Diligence Inspections"); provided, however, that the Grantee shall not perform any physical alterations to the Property without the written permission of the Grantor. In the event Grantee determines, in its sole discretion, that any one or more of the Due Diligence Inspections is not acceptable to Grantee, then Grantee may terminate this Option and be relieved of its obligations hereunder.

6. **Failure to Exercise.** In the event Grantee fails to exercise this Option before its

expiration for any reason other than a default by Grantor, this option shall terminate, and none of the parties hereto shall have any further rights, claims, or obligations with respect to this Option.

8. **Assignment.** Grantee shall have the right to assign its rights and obligations under this Option without the consent of Grantor. All acts performable by Grantee under this Option may be performed by any assignee. Any assignment shall be in writing, acknowledged, and recorded in the Registry of Deeds in the county where the property is located. Such assignment shall relieve Grantee from the obligations of this Option.

9. **Licenses and Permits.** Grantor agrees that during the term of this Option, Grantee may attempt to obtain any licenses and/or permits relating to the Property which Grantee finds necessary or desirable for its contemplated use of the Property, and Grantor shall cooperate with Grantee in obtaining the same, at no expense to Grantor.

10. **Notice.** All notices pursuant to this Option shall be in writing and shall be delivered by hand, mailed overnight courier or by certified mail, postage prepaid, return receipt requested, to the following addresses:

- (i) To the Grantor(s):
Dr. and Mrs. Lyle J. Micheli
319 Longwood Avenue
Boston, MA 02155
- (ii) To the Grantee(s):
Antrim Wind Energy LLC
c/o Eolian Renewable Energy, LLC
155 Fleet Street
Portsmouth, New Hampshire 03801
Attention: Jack Kenworthy

with a copy to:

Jeffrey T. Selser, Esq.
Verrill Dana LLP
One Portland Square
Portland, Maine 04101

Notices shall be deemed given on the date mailed, or, if hand delivered, on the date of delivery. Either party may, by such manner of notice, substitute persons or addresses for notice other than those listed above.

11. **Miscellaneous.** This Option shall be binding upon and inure to the benefit of Grantor and Grantee, their successors and assigns. This Option is, and shall be, governed in all respects (including validity, construction, interpretation, and effect) by the laws of the State of New Hampshire, without giving effect to its principles or rules of conflict of laws to the extent that such principles or rules would require or permit the application of the laws of another

jurisdiction. Should any provision of this Option for any reason be declared invalid or unenforceable, such decision shall not affect the validity or enforceability of any other provisions of this Option, which shall remain in full force and effect. This Option shall be recorded in the Registry of Deeds in the County in which the Property is located.

IN WITNESS WHEREOF, Grantor and Grantee have executed or caused this instrument to be executed as of the date first above written.

WITNESS:

GRANTOR(s)

DR. LYLE MICHELI

Cristina C Murphy

By: 

MRS. ANNE J. MICHELI

Cristina C Murphy

By: Anne J Micheli

WITNESS:

GRANTEE
ANTRIM WIND ENERGY LLC

Katrine Bick

By: 

Name: John B. Kenworthy
Its. Executive Officer

STATE OF Massachusetts
County of Suffolk, SS

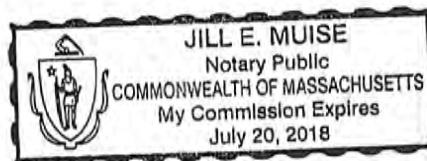
September 16, 2011

Then personally appeared the above-named Lyle Micheli in his/her capacity as owner/joint tenant of the Property and acknowledged the foregoing instrument to be his/her free act and deed.


Dr. Lyle J. Micheli

Before me,


Notary Public



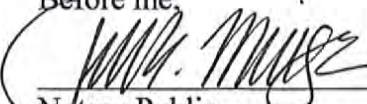
STATE OF Massachusetts
County of Suffolk, SS

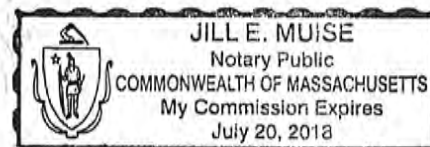
September 16, 2011

Then personally appeared the above-named Anne J. Micheli in his/her capacity as owner/joint tenant of the Property and acknowledged the foregoing instrument to be his/her free act and deed.


Mrs. Anne J. Micheli

Before me,

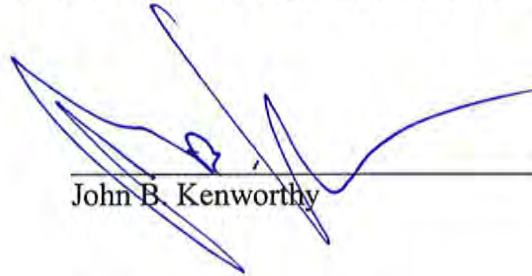

Notary Public



STATE OF NEW HAMPSHIRE
County of Rockingham

Sept 8, 2011

Then personally appeared the above-named John B. Kenworthy in his/her capacity as Executive Officer of Antrim Wind Energy LLC and acknowledged the foregoing instrument to be his/her free act and deed in said capacity and the free act and deed of Antrim Wind Energy, LLC.


John B. Kenworthy



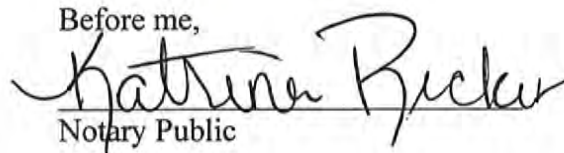
Before me,

Notary Public

Exhibit A

Property Description and Map

A certain lot or parcel of land situated off Salmon Brook Road in the Town of Antrim, County of Hillsborough, and State of New Hampshire, more particularly described in the deed dated December 6 1996 and recorded at the Hillsborough County Registry of Deeds in Book 5774, Page 1777 and depicted on the map below.

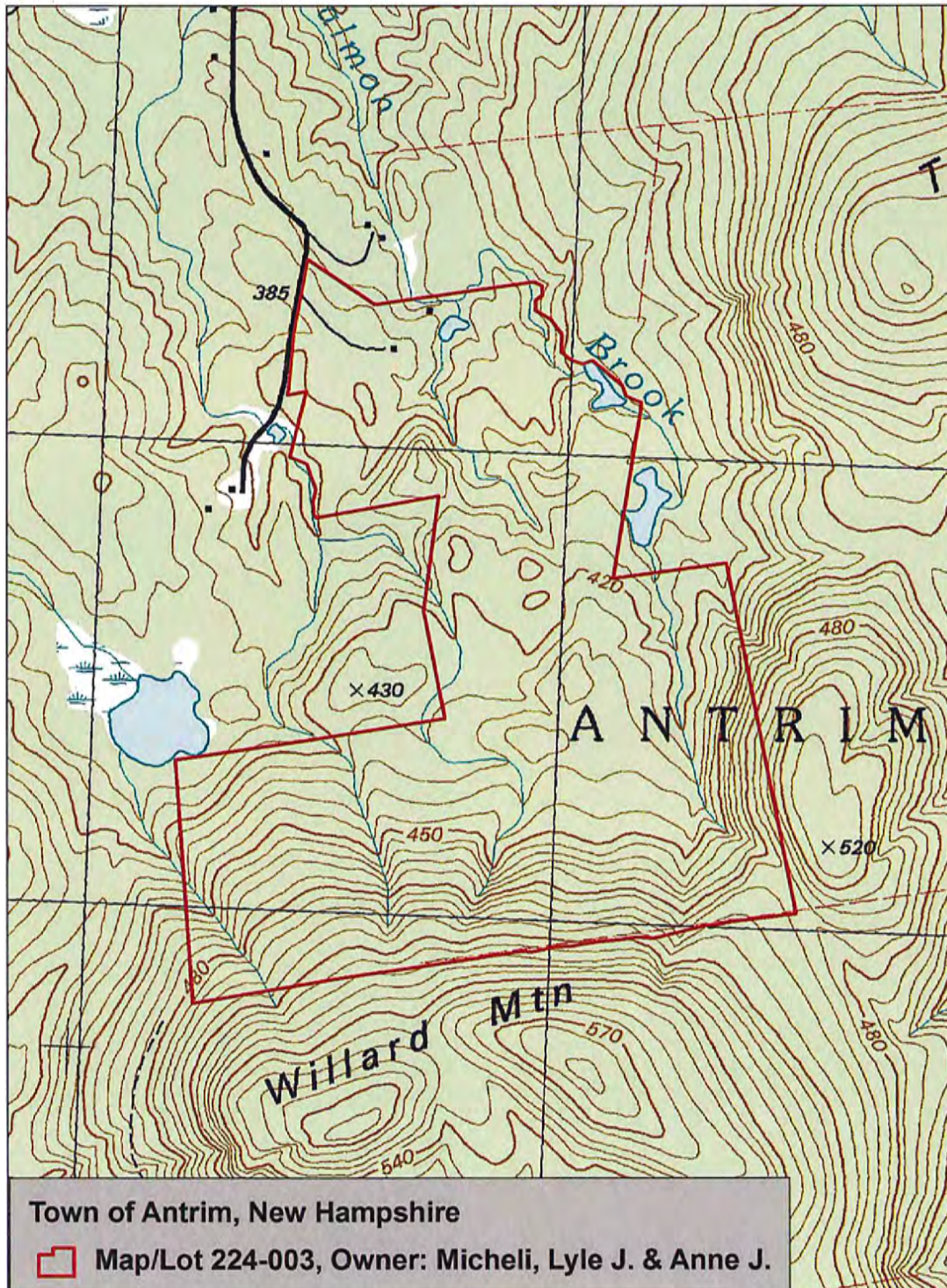


Exhibit B
Form of Easement

EASEMENT

THIS EASEMENT is made by Dr. Lyle J. Micheli and Mrs. Anne J. Micheli (collectively, "Grantor"), the owner(s) of a certain lot or parcel of land situated off Salmon Brook Road in the Town of Antrim, County of Hillsborough, and State of New Hampshire, more particularly described in the deed dated December 6 1996 and recorded at the Hillsborough County Registry of Deeds in Book 5774, Page 1777 (hereinafter referred to as the "Servient Land").

WHEREAS, Antrim Wind Energy LLC a Delaware limited liability company having a mailing address at c/o Eolian Renewable Energy, LLC, 155 Fleet Street, Portsmouth, New Hampshire 03801 ("Grantee"), plans to construct and operate a wind power project, including wind turbine generators and towers and related equipment, facilities, infrastructure and substructures (hereinafter referred to as the "Wind Power Project"), on lands near the Servient Land, including (without limitation) the lands described on the attached Exhibit A; and

WHEREAS, the Wind Power Project will emit sound including at levels that may exceed applicable state or local maximum sound level limits for the Servient Land, and may cast shadows onto or produce a shadow flicker effect at the Servient Land;

NOW, THEREFORE, for good and valuable consideration received, Grantor hereby grants an easement to Grantee for: (a) the right to have sound generated from the Wind Power Project impact the Servient Land and exceed otherwise applicable state or local maximum sound level limits applicable to locations on the Servient Land; (b) the right to cast shadows or shadow flicker from the Wind Power Project onto the Servient Land; and (c) the right to locate turbines closer than any minimum distance setback requirement to structures or property lines, including the right to have the blades of wind turbines overhang the Servient land;

This Easement shall expire on the earlier to occur of (a) fifty years after the date hereof, or (b) the date on which the Wind Power Project is fully decommissioned and has been abandoned or surrendered by Grantee (or its successors and/or assigns, as the case may be).

This Easement shall extend to, be binding upon and shall inure to the benefit of heirs, personal representatives, successors and assigns of the parties hereto. The burden of the easement hereby granted shall run with the Servient Land, until it expires as set forth above. The benefit of the easement hereby granted is not appurtenant to any particular property, but shall be transferable in whole or in part, and may be sold, leased, assigned, pledged, and mortgaged by Grantee, it being the intent of the parties that such benefit may be transferred to any successors or assignees of Grantee that own or operate the Wind Power Project, as it may be modified, divided or expanded.

As a condition of the grant of this Easement, Grantee agrees to indemnify, defend, and hold Grantor harmless from and against any and all damage, loss, claim, liability, or expense of any kind arising from any claim of bodily injury and/or physical or property damage of any kind present by third parties, and physical damage to or destruction of the Servient Land caused by Wind Power Project, except to the extent arising from the negligence or willful misconduct of Grantor.

The benefit of the easement hereby granted may be enforced by Grantee, its successors and assigns, by any appropriate legal or equitable remedy. In the event that Grantee, its

successors or assigns, shall bring an action against Grantor, its successors or assigns, by reason of a breach or violation of this Easement by Grantor, its successors and assigns, the substantially prevailing party in such action shall be entitled to recover their reasonable attorneys' fees and court costs incurred in such action from the substantially non-prevailing party.

WITNESS our hands and seals this _____ day of _____, 2011.

In the presence of:

GRANTOR(s)

Print: Dr. Lyle J. Micheli

Print: Mrs. Anne J. Micheli

STATE OF _____
COUNTY OF _____

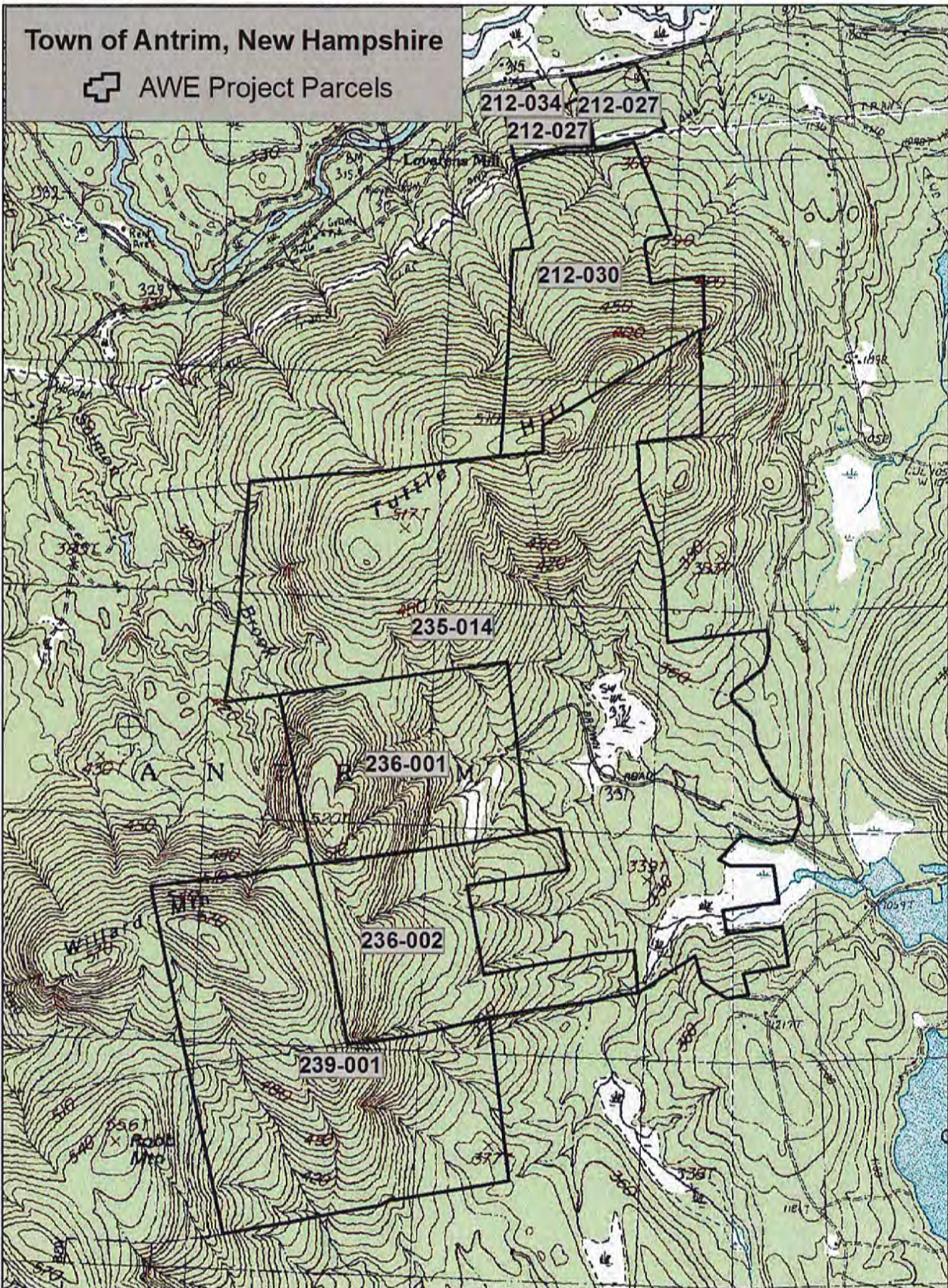
_____, 20__

Personally appeared the above-named LYLE J. MICHELI and ANNE J. MICHELI and [severally] acknowledged the foregoing instrument to be his/her/their free act and deed.

Before me,

Notary Public
Print Name: _____
My Commission Expires: _____

EXHIBIT A
Proposed Wind Power Project Lands
(not intended to be exhaustive)



Camela D. Caughlin

EOLIAN RENEWABLE ENERGY LLC
155 FLEET ST.
PORTSMOUTH NH 03801
ATTN: JACK KENWORTHY

Antrim Wind (Antrim, NH – Map #212 Lot #'s 212-030-000; 212-027-000; 212-034-000 –
Michael J. Ott)

EXHIBIT C
MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR

Michael J. Ott
P.O. Box 160
Antrim, New Hampshire 03440

LESSEE

Antrim Wind Energy LLC
c/o Eolian Renewable Energy
155 Fleet Street
Portsmouth, New Hampshire 03801

PREMISES:

Lessor is the owner of that certain real property described in Exhibit A attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as Exhibit B (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

TERM OF LEASE:

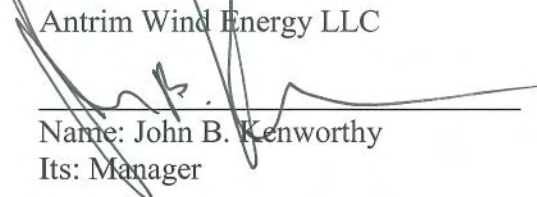
Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

EXTENSION TERM:

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

Antrim Wind (Antrim, NH – Map #212 Lot #'s 212-030-000; 212-027-000; 212-034-000 – Michael J. Ott)

DATED at Portsmouth, New Hampshire this 18th day of December 2009.

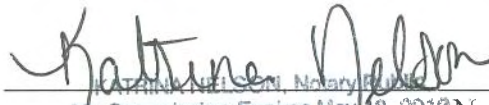
Antrim Wind Energy LLC
By: 
Name: John B. Kenworthy
Its: Manager

STATE OF NEW HAMPSHIRE

ss.:

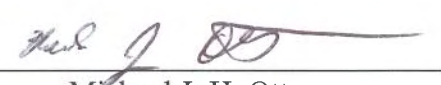
COUNTY OF ~~HILLSBORO~~ Rockingham

On this 18th day of December, 2009, before me, the undersigned, a Notary Public in and for said State, personally appeared John B. Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.


Katherine Nelson, Notary Public
My Commission Expires May 18, 2010 Notary Public

DATED at Town Hall, Antrim NH this 24 day of December, 2009.

MICHAEL J.H. OTT

By: 
Name: Michael J. H. Ott
Its: Self

STATE OF NEW HAMPSHIRE

ss.:

COUNTY OF HILLSBORO

On this 24 day of December, 2009 before me, the undersigned, a Notary Public in and for said State, personally appeared Michael J. H. Ott, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.



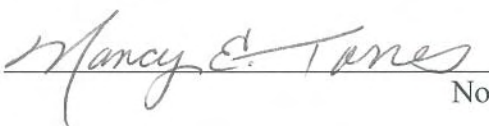

Nancy E. Torres
Notary Public

EXHIBIT A to MEMORANDUM OF LEASE

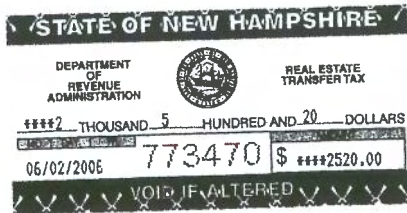
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2006 JUN -2 PM 2:37

AL7

Record and return to:
Craighead and Martin, PLLC
62 Stark Street
Manchester, NH 03101

22.39
2
24.39



9-60
9-61
9-64

2520

WARRANTY DEED

TS

KNOW ALL MEN BY THESE PRESENTS, That, we, John A. Eddy and Laura C. Eddy, husband and wife, both of 763 Templeton Turnpike Road, Fitzwilliam, County of Cheshire, and State of New Hampshire, for consideration paid, grants to Michael James Hutchins Ott, a single person of 493 Ocean Boulevard, #24, Hampton, County of Rockingham, and State of New Hampshire, with Warranty Covenants:

The following four (4) tracts of land situated in Antrim, County of Hillsborough and State of New Hampshire:

Tract 1:

A certain tract of land situated in the northwest part of Antrim in the County of Hillsborough and State of New Hampshire, bounded and described as follows:

Beginning at the Northeast corner of the premises at a stake and stones by an old road leading from near the dwelling formerly occupied by Walter Buchanan to the dwelling of the late William R. Carr; thence

1. Westerly by the same old road about 101.5 rods to land formerly owned by the late Hiram Griffin; thence
2. Southerly by said Griffin land about 62 rods to the corner of the wall by land of the Steele heirs; thence
3. Easterly by said last mentioned land about 94 rods to the corner of the wall by land of the late William R. Carr; thence
4. Northerly by said Carr land about 19.5 rods to a stake and stones; thence

9-60-33

9-61-205

9-64-2.5

9-61-205

212-30-241ad

9-60-33

212-27-39ad

9-64-2.5

212-35-5.1 acc

BK7685PG0864

ORIGINAL NOT SUITABLE FOR
PROPER REPRODUCTION

5. Easterly by said Carr land about 21.5 rods to a stake and stones; thence
6. Northerly by said Carr land about 49 rods to the first named bound.

Estimated to contain 43 acres, more or less.

Tract 2:

Also another tract of land situated in the northwest part of said Antrim, New Hampshire, bounded and described as follows:

Beginning at the Northeast corner of the premises; thence

1. Southerly by land formerly owned by Samuel Tuttle 52 rods; thence
2. Westerly by the wall by land formerly owned by Dodge to the Northwest corner of said Dodge land; thence
3. Southerly by said Dodge land to land formerly owned by Davis; thence
4. Westerly by said Davis land and land formerly owned by Handley to land formerly of Samuel Curtis; thence
5. Northerly and Easterly by said Curtis land to land formerly owned by John McClure, et al; thence
6. Easterly by said McClure land to land formerly owned by Samuel Weston; thence
7. Southerly by said Weston land to land formerly owned by Samuel Tuttle, et al, about 57 rods; thence
8. Easterly by said Tuttle land to the point of beginning.

Said to contain 150 acres, more or less.

Tract 3:

A certain tract of land with the buildings thereon, if any, situate in the north part of Antrim, Hillsborough County and State of New Hampshire, bounded and described as follows:

BK 7685 PG 0865

Beginning at the Northwest corner of the premises at a stake and stones by land formerly owned by John Dodge; thence

1. Southerly by said Dodge land to the old road leading from the former residence of William R. Carr to the former residence of Samuel Dinsmore, to a stake and stones; thence
2. Easterly by said road about 37 rods to stake and stones; thence
3. Northerly by land formerly owned by Chandler Boutelle to a stake and stones by land formerly owned by Grafton Curtice; thence
4. Westerly by said Curtice land to the bound first mentioned.

Estimated to contain 6.5 acres, more or less, but reserving to the Public Service Company of New Hampshire and those claiming under it, any pole rights it may have acquired.

Tract 4:

Also another tract adjoining the above tract, bounded and described as follows:

Beginning at a bound on the Southerly side of the Keene Road, State Highway, at an old roadway; thence

1. Easterly by said Keene Road to land formerly of William M. Conn; thence
2. Southerly by wall and said Conn land to land formerly of William Boutelle; thence
3. Westerly by said Boutelle land to a stake and stones; thence
4. Southerly by said Boutelle land to the Old Town Road; Thence
5. Westerly by said Old Road to road first above mentioned; thence
6. Northerly by said roadway to the bound of beginning.

Said premises are subject to the rights of the public of the State highway and rights heretofore conveyed to the Public Service Company of New Hampshire.

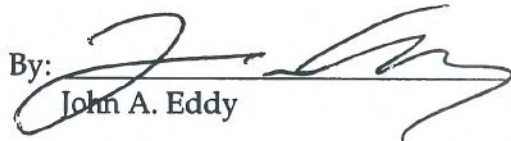
BK 7685 PG 0866

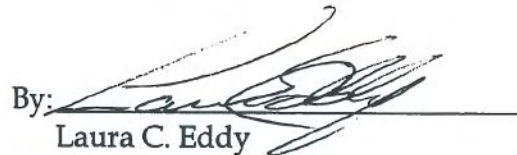
Subject to current use tax recorded with the said Registry of Deeds at Book 3696, Page 137.

This conveyance of the within described properties are not subject to homestead rights.

Meaning and intending to describe and convey the same premises conveyed to the within grantor by Warranty Deed of Donald H. Hardwick, Sr., dated June 10th, 1999, and recorded at the Hillsborough County Registry of Deeds at Book 6115 Page 1762.

SIGNED this 2nd day of June, 2006.

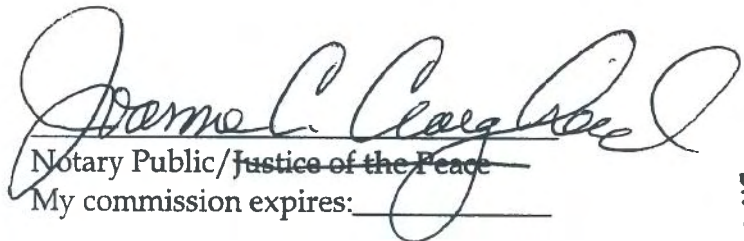
By: 
John A. Eddy

By: 
Laura C. Eddy

STATE OF NEW HAMPSHIRE
COUNTY OF HILLSBOROUGH

On this 2nd day of June, 2006, personally appeared the above-named John A. Eddy and Laura C. Eddy, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the foregoing instrument, and acknowledged that they executed the same in that capacity, and for the purposes therein contained.




Notary Public / ~~Justice of the Peace~~
My commission expires: _____

BK 7685 PG 0867

ENV

EOLIAN RENEWABLE
ENERGY LLC
155 FLEET ST
PORTSMOUTH, NH

03fc1-4050

Barnes O. Coughlin

ANTRIM WIND ENERGY (ANTRIM, NH – TAX MAP #236 /PARCEL #001-000 – STEVEN R. COTRAN)

EXHIBIT C
MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR

Mr. Steven R. Cotran
26 McIntosh Lane
Bedford, NH 03110

LESSEE

Antrim Wind Energy LLC
c/o Eolian Renewable Energy
155 Fleet Street
Portsmouth, New Hampshire 03801

PREMISES:

Lessor is the owner of that certain real property described in Exhibit A attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as Exhibit B (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

TERM OF LEASE:

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

EXTENSION TERM:

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

ANTRIM WIND ENERGY (ANTRIM, NH – TAX MAP #236 /PARCEL #001-000 – STEVEN R. COTRAN)

DATED at Manchester, NH this 21st day of December, 2010.

By: 
Name: Steven R. Cotran
Its: Self/landowner

STATE OF NEW HAMPSHIRE


COUNTY OF Hillsborough) ss.:

On this 21st day of December, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared Steven R. Cotran, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.




Notary Public

DATED at Portsmouth this 20 day of December, 2010.

By: 
Name: John B. Kenworthy
Its: Manager

STATE OF NEW HAMPSHIRE

COUNTY OF ROCKINGHAM) ss.:

On this 20th day of December, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared John B. Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his, signature on the instrument, the individual(s) or the person(s) upon behalf of which the individual acted, executed the instrument.

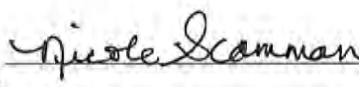
Notary Public 



EXHIBIT A to Memorandum of Lease

6065402

2006 SEP 13 AM 11:11

McKenney + Bausha

10.39 No TS QUITCLAIM DEED
2
12.39

KNOW EVERYONE BY THESE PRESENTS

That Diane Cotran, single, of 83 Rosewell Road, Town of Bedford, Hillsborough County, State of New Hampshire, for consideration paid, grants to Steven R. Cotran, single, of 26 McIntosh Lane, Town of Bedford, Hillsborough County, State of New Hampshire, with **quitclaim covenants**

A certain tract or parcel of land, with the buildings thereon, situated in the Town of Antrim, County of Hillsborough, State of New Hampshire, on Pigeon Mountain, being more particularly bounded and described as follows:

Containing one hundred thirty (130) acres, be the same more or less, and is Lot #21 in the Great right number five, drawn to the original right of Pierce and Moore, bounded on the north by land now or formerly of Artemus Brown, on the east by land now or formerly of George Brown, on the south by land now or formerly of Condry and others, and on the west by Hubbard Lot, so-called.

Meaning and intending to describe and convey the same premises conveyed to Diane Cotran, by Quitclaim Deed of Steven R. Cotran (a/k/a/ Steven Cotran) dated November 25, 1997 and recorded at Volume 5877, Page 1149, Hillsborough County Registry of Deeds.

This conveyance is made pursuant to the terms of the decree of divorce in the Matter of Steven R. Cotran and Diane M. Cotran, Hillsborough County Superior Court, and is therefore exempt from New Hampshire real estate transfer taxes pursuant to RSA 78-B:2, XIII.

The Grantor releases to the Grantee all rights of homestead and other interests therein.

Dated: 6/16/06

Diane Cotran L.S.
Diane Cotran

State of New Hampshire, County of Hillsborough June 16, 2006

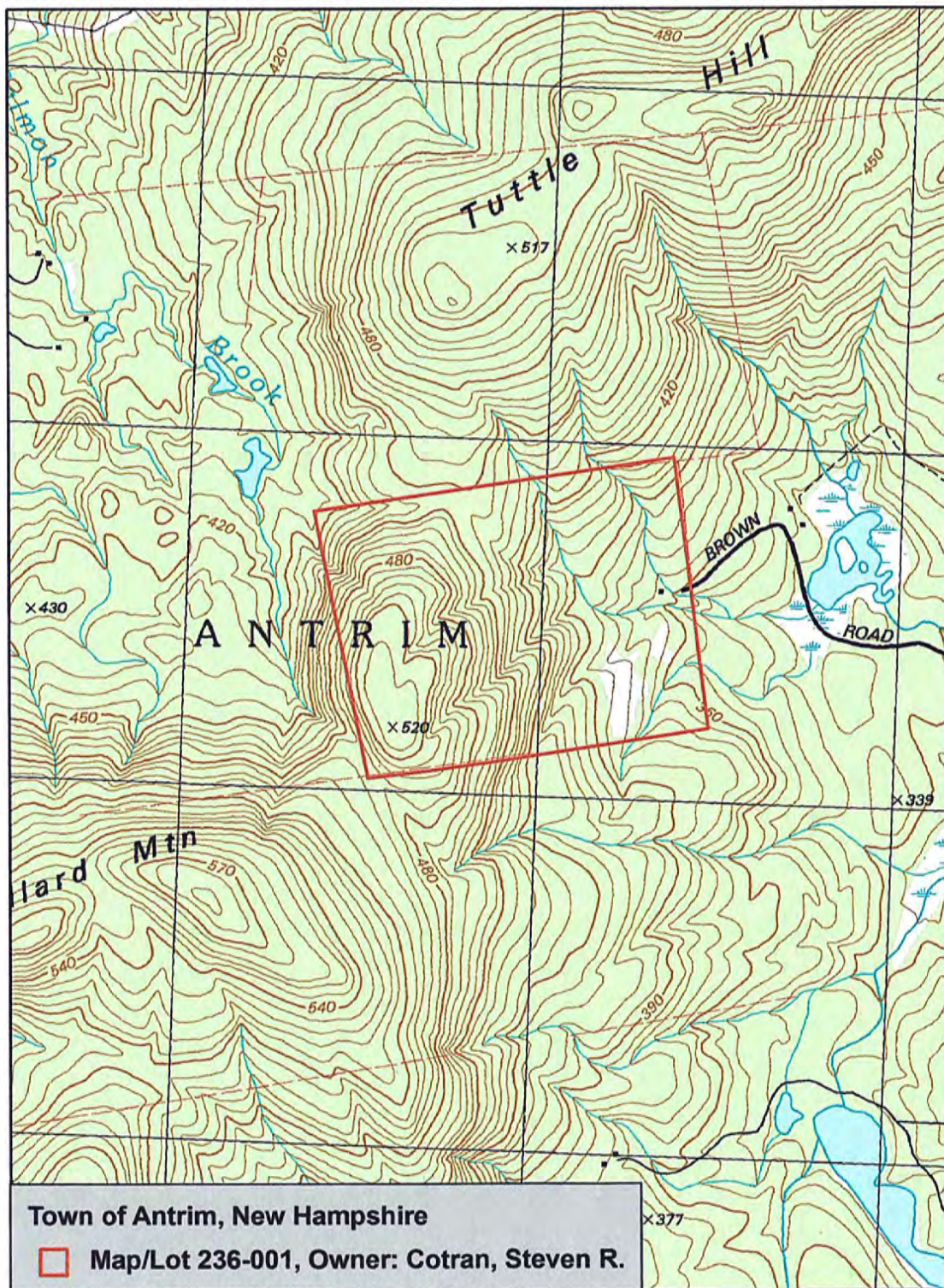
Personally appeared Diane Cotran, known to me, or satisfactorily proven, to be the person whose name is subscribed to the foregoing instrument and acknowledged that s/he executed the same for the purposes therein contained.

Before me,

Catherine P. Bausha
Justice of the Peace / Notary Public
CATHERINE P. BAUSHA
★ JUSTICE OF THE PEACE - NEW HAMPSHIRE ★
My Commission Expires February 22, 2011

BK7737PG1502

EXHIBIT B to Memorandum of Lease



ANTRIM WIND ENERGY LLC (ANTRIM, N.H. - TAX MAP #239/PARCEL #001-000-
ARTHUR WHITTEMORE, ET. AL., TRUSTEES OF WHITTEMORE TRUST)

MEMORANDUM OF LEASE

PARTIES TO LEASE:

LESSOR

Helen M. Whittemore and Paul J. Whittemore,
Trustees of the Whittemore Trust
c/o Paul J. Whittemore
P. O. Box 528
Auburn, New Hampshire 03032-0528

LESSEE

Antrim Wind Energy, LLC
c/o Eolian renewable Energy
155 Fleet Street
Portsmouth, New Hampshire 03801

PREMISES:

Lessor is the owner of that certain real property described in Exhibit A attached hereto ("Lessor's Land"). Lessor leases to Lessee all or a portion of Lessor's Property as depicted on the map attached hereto as Exhibit B (the "Leased Premises"), together with the non-exclusive right of ingress to and egress from Windpower Facilities (defined in the Lease) located on the Leased Premises, adjoining properties and elsewhere over and across the Leased Premises and Lessor's Land by means of existing roads and lanes, if any, or otherwise by such route or routes as Lessee may construct from time to time.

TERM OF LEASE:

Lease shall be for an initial term of twenty-five (25) years and shall commence on the Effective Date.

EXTENSION TERM:

Lessee shall have the option to renew the Lease for one additional twenty-five (25) year term.

CERTIFICATE OF TRUSTEE:

The undersigned Trustees, as Trustees of the Whittemore Trust, under Indenture of Trust dated October 2, 1992, by Arthur F. Whittemore, Helen M. Whittemore and Paul J. Whittemore, and thereto have full and absolute power in said trust agreement to convey any interest in real estate and improvements thereon held in said trust and no purchaser or third party shall be bound to inquire whether the trustees have said power or are properly exercising said power or to see to the application of any trust asset paid to the Trustees for a conveyance thereof.

DATED at _____, this 10 day of ^{February}~~January~~, 2011.

By:

Paul J. Whittemore
Name: Paul J. Whittemore

Its: Owner/Trustee

By:

Helen M. Whittemore
Name: Helen M. Whittemore

Its: Owner/Trustee

STATE OF NEW HAMPSHIRE
COUNTY OF Rochester

On this 10th day of ^{FEBRUARY}~~January~~, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Paul J. Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Sharon A. Cann
Notary Public/Justice of the Peace

SHARON A. CANN
Printed Name

Expiration Date



STATE OF AZ
COUNTY OF Maricopa

On this 22 day of ^{FEB}~~January~~, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Helen M. Whittemore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.



JACK BLOOMFIELD
Notary Public - Arizona
Maricopa County
Expires 09/19/2013

Jack Bloomfield
Notary Public

JACK Bloomfield
Printed Name

9/19/2013
Expiration Date

DATED at Portsmouth, New Hampshire this 8 day of ~~January~~^{March}, 2011

Antrim Wind Energy LLC

By:

Name: Jack Kenworthy (Soln)
Its: Manager

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

On this 8 day of ~~January~~^{March}, 2011, before me, the undersigned, a Notary Public in and for said State, personally appeared Jack Kenworthy, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Katrina Ricker
Notary Public/Justice of the Peace

Katrina Ricker
Printed Name

3/24/2015
Expiration Date



EXHIBIT A to Memorandum of Lease

354837

93 OCT 13 AM 8:28

Q U I T C L A I M D E E D

KNOW ALL MEN BY THESE PRESENTS:

That ARTHUR F. WHITTEMORE and HELEN M. WHITTEMORE, married, of
 Cuddihee Hill Road, Antrim, County of Hillsborough and
 State of New Hampshire,

for consideration paid,

grant to ARTHUR F. WHITTEMORE and HELEN M. WHITTEMORE, married, of
 Cuddihee Hill Road, Antrim, County of Hillsborough and
 State of New Hampshire, 03440, and PAUL J. WHITTEMORE,
 married, of 184 Emery Street, Berlin, County of Coos and
 State of New Hampshire, 03570, as Trustees of the
 Whittemore Trust, under Indenture of Trust, dated October
 2, 1992,

with QUITCLAIM covenants,

Three certain tracts of land situated in the northwesterly part
of Antrim, in the County of Hillsborough and State of New Hampshire,
bounded and described as follows:

FIRST: Beginning at the Southeast corner of the premises at a
beech tree, marked at the southwest corner of Tenney and Dutton's
land; thence westerly, by land of Evans and Hayward to the Worthley
pasture; thence northerly by said Worthley pasture to land of Samuel
Holt; thence easterly by said Holt's land to land of Tenney and
Dutton; thence southerly by said Tenney and Dutton's land to the
first named bounds. Estimated to contain one hundred and twenty-one
acres (121), more or less.

SECOND: Beginning at the northeast corner of the premises at
the northwest corner of land formerly owned by John R. Hills; thence
southerly by said land to John Hayward's land; thence westerly by
land of said John Hayward and the "Allds Pasture", so-called, to land
formerly owned by William Weston, deceased; thence northerly on land
formerly owned by said Weston to the "Woodbury Pasture", so-called;
thence easterly by said Woodbury Pasture to the bounds first
mentioned. Containing one hundred thirteen (113) acres, more or
less.

BRIGHTON, FERNALD, TAFT & FALBY - PROFESSIONAL ASSOCIATION - PETERSBOROUGH, N. H. 03458-0270

BK5480PG1134

ANTRIM WIND ENERGY LLC (ANTRIM, NH - TAX MAP #239 /PARCEL #001-000 -
ARTHUR WHITTEMORE, ET. AL., TRUSTEES OF WHITTEMORE TRUST)

-2-

THIRD: Beginning at the northwesterly corner of the premises at the corner of walls running southerly and westerly; thence southerly by land formerly of Lee and Holden to the southwest corner of the premises to land now or formerly of William Weston; thence easterly by land now or formerly of said Weston and land now or formerly of Worthley and Hill to the southeast corner of the premises at the corner of land now or formerly of Samuel Fletcher by the corner of walls; thence northerly by land now or formerly of said Fletcher and land now or formerly of Davis to the northeast corner at land formerly of Darias Hubbard; thence westerly by land formerly of said Hubbard to the bound first mentioned. Containing one hundred twenty-three (123) acres, and 36 rods, more or less.

This conveyance is made subject to all restrictions of record or otherwise, stipulations and agreements made or existing between any predecessor in title in reference to the said premises, so far as said matters concern the premises hereby conveyed.

For title of Arthur F. Whittemore and Helen M. Whittemore, reference is made to the deed from Francis R. Fellows, Ruth M. Fellows and Arthur F. Whittemore to Arthur F. Whittemore and Helen M. Whittemore, dated August 31, 1976 and recorded with the Hillsborough County Registry of Deeds in Book 2483, Page 432.

SIGNED this 2nd day of October, 1992.

| | |
|------------------------------------------------|--------------------------|
| STATE OF NEW HAMPSHIRE | |
| DEPARTMENT OF REVENUE ADMINISTRATION | REAL ESTATE TRANSFER TAX |
| THOUSAND XXX HUNDRED AND 40 DOLLARS | |
| 10/13/93 | 111107 \$ 40.00 |
| VOID IF ALTERED | |

Arthur F. Whittemore
Arthur F. Whittemore
Helen M. Whittemore
Helen M. Whittemore

STATE OF NEW HAMPSHIRE
COUNTY OF HILLSBOROUGH

October 2, 1992

Before me, the undersigned officer, personally appeared ARTHUR F. WHITTEMORE and HELEN M. WHITTEMORE, and acknowledged the foregoing to be their free act and deed.

Mark D. Fernald
Notary Public

My commission expires: _____

MARK D. FERNALD
COMMISSION EXPIRES 6/28/94

BRIGHTON, FERNALD, TAFT & FALBY - PROFESSIONAL ASSOCIATION - PETERBOROUGH, N. H. 03458-0270

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ANTRIM WIND ENERGY LLC (ANTRIM, NH TAX MAP #239, PARCEL #001-000 - WHITTEMORE TRUST.
EXHIBIT B TO MEMORANDUM OF LEASE

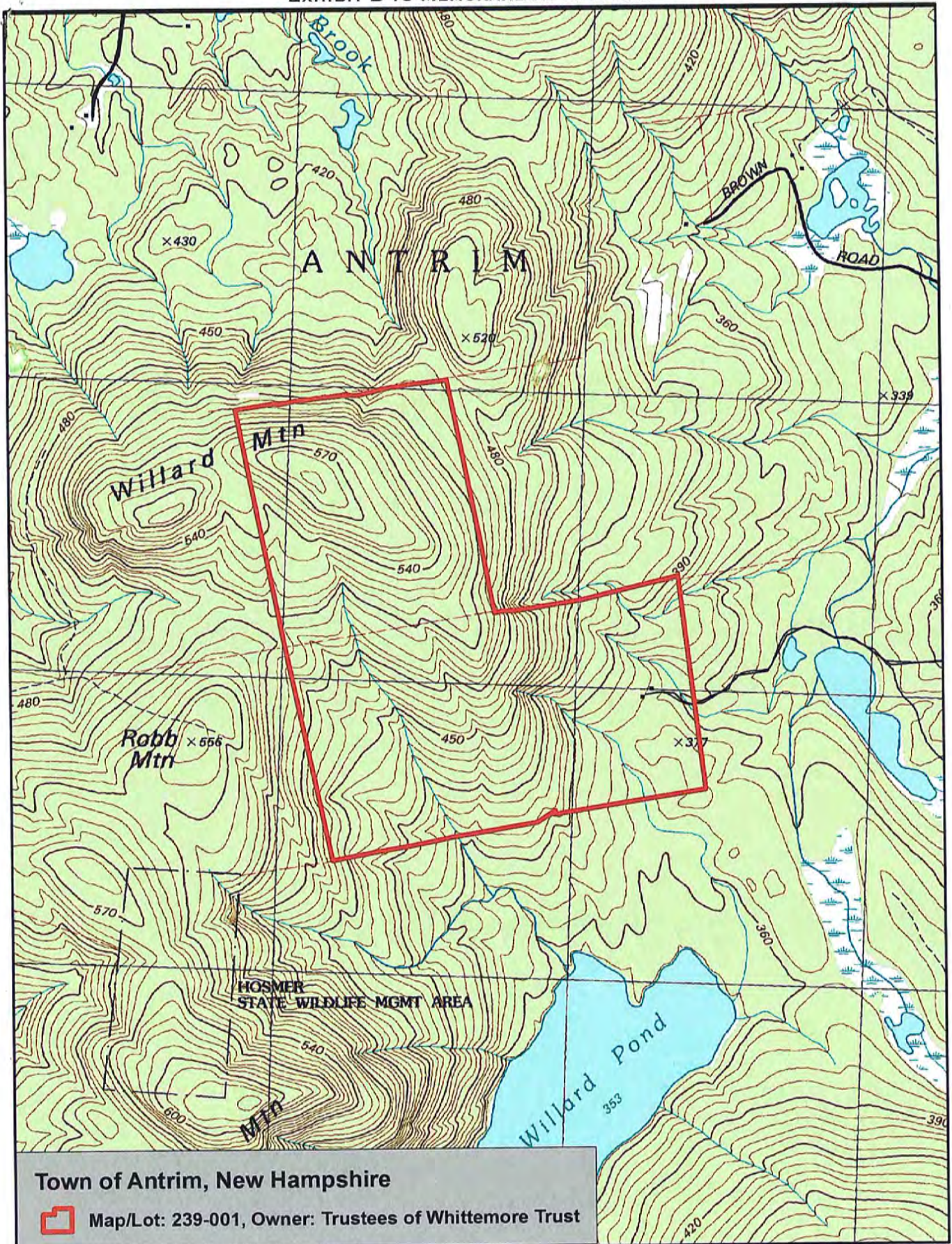


EXHIBIT 11
RESPONSE TO ENV-WT 302.04(A)

Response to Env-Wt 302.04(a)

(a) 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:

(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.

Nine 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 0.19 acres (8,349 square feet) of wetland impact are expected to be incurred as a result of construction and operation of the proposed Project. 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) 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 constraints 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 H of the SEC Application.

(3) The type and classification of the wetlands involved;

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 nine wetlands will be impacted by Project operation and development. Seven of these are palustarine forested wetlands (five PFO1 and two PFO4), and two are palustarine scrub-shrub wetlands (PSS1) in maintained electric transmission ROW. 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 0.19 acres (8,349 square feet) of wetland impact are expected to be incurred as a result of construction and operation of the proposed Project. Specific impacts to individual wetlands are described in Table 4-1 of the Wetland Delineation Report, which is provided in Exhibit 5 of this Application.

- (7) *The impact on plants, fish and wildlife including, but not limited to:*

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 I 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 J 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 I of the SEC Application and associated appendix. The Project does not anticipate having an undue adverse impact.

- (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.1 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.

- (12) 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 I of the SEC Application.

- (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 9 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 Alteration of Terrain Application in Appendix 2B 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 the Alteration of Terrain Application in Appendix 2B of the SEC application).

(14) The potential of a proposed project to cause or increase flooding, erosion, or sedimentation;

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;

This criterion typically applies to projects involving shoreline alterations. Since there are no large open bodies of water or flowing streams being affected by the Project, proposed redevelopment of the site will not redirect current or wave energy. 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 1,850 acres of private land on seven parcels for the development of the Project. All wetlands that will be impacted by the Project are located entirely within these parcels.

(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).

The total permanent impact to wetlands and surface water resources is approximately 0.19 acres. This wetland impact is only 0.3 percent of the land area to be disturbed by this project (57.9 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 a boxculvert 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 I and Appendices 9C and 9D of the SEC Application.

(19) The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national 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; and

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 interruption 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.