

# **WETLAND DELINEATION REPORT**

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

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## **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 wind turbines, an electrical collection system and interconnection substation, new access road, and an operations and maintenance building. There will be no new electrical transmission lines, other than collector system lines, constructed as part of this Project. The total direct impact for the access roads, the turbine pads, and electrical collector system will be approximately 57.1 acres.

The proposed project is sited on the ridges of Tuttle Hill and Willard Mountain which are oriented east-northeast to west-southwest. The ridges are approximately parallel to NH Route 9, which is about  $\frac{3}{4}$  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, November 2011, and October 2014 (refer to Attachment B for professional resume and qualifications). TRC also investigated hydrologic connectivity (drainage ditches, natural swales, intermittent and perennial streams outside the study corridor when necessary to verify “normal conditions” or “nexus” hydrologic determinations. The delineations were performed in accordance with the U.S. Army Corps of Engineers (USACE) wetland delineation criteria and methodology which is described in Section 3.2. The USACE data sheets have been compiled for this Wetland Delineation Report and presented in Attachment C.

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

### **3.2     *Wetland Delineation Method***

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

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

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

## 4.0 WETLAND DELINEATION RESULTS

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

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

### 4.1 Vegetation

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

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

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

### 4.2 Hydrology

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

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

### **4.3    *Soils***

TRC reviewed the published soil survey of the Project area and conducted soil profile characterizations in the study corridor to confirm the presence of hydric soil 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**

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

**Table 4-1  
Summary of Wetlands within Project Area**

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

<b>Table 4-1</b> <b>Summary of Wetlands within Project Area</b>				
<b>Figure 2</b> 8.5" x 11" Sheet Number	<b>Wetland ID</b>	<b>Wetland Types and Associations</b>	<b>Associated Wetland Impact</b>	<b>Cowardin Classification</b>
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	0.016 acre/708 sq. ft. Transmission tap structure and guys	PSS1
1	AN32	Isolated scrub-shrub wetland within transmission ROW	0.032 acre/1,392 sq. ft. Access Road	PSS1
1	AN33	Isolated forested wetland within skidder trail	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
4	AN36	Isolated forested wetland with peat soils	No direct impact	PFO1
4	AN37	Isolated forested wetland adjacent to ATV trail	No direct impact	PFO1
4	AN38	Isolated forested wetland with potential vernal pool	No direct impact	PFO1
5	AN41	Isolated forested wetland.	0.06 acre/2,584 sq. ft. Turbine 9.	PFO1
4	AN1000	Isolated forested wetland	0.022 acre/963 sq. ft. Turbine 4.	PFO1
2	AN-LD 1	Isolated forested wetland.	No direct impact	PFO1
2	AN-LD 2	Isolated forested and scrub-shrub wetland.	No direct impact	PFO/PSS1
2	AN-LD 3	Isolated forested wetland	No direct impact	PFO1
2	AN-LD 4	Isolated scrub-shrub wetland. Formerly borrow pit area.	0.02 acre/955 sq. ft. Temporary staging area.	PSS1
<b>TOTAL IMPACT</b>			<b>0.21 acre/9,121 sq. ft.</b>	

#### 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 steplebush (*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 ephemerally 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.

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

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

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

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

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

#### **4.5 Waterbody Descriptions**

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

<b>Table 4-2</b> <b>Summary of Streams within Project Area</b>				
<b>Figure 2</b> <b>8.5" x 11"</b> <b>Sheet Number</b>	<b>Stream ID</b>	<b>Flow Regime</b>	<b>Associated Impact</b>	<b>Associated Wetland(s)</b>
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

4	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	
2	AN-LD-INT 1	Intermittent	No direct impact	AN_LD 3
<b>TOTAL IMPACT</b>			<b>230 linear ft./ 452 sq. ft.</b>	

**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.

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

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

#### 4.6 Natural Resource Conservation Service Soil Series Descriptions

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

##### ***Tunbridge-Lyman-Monadnock complex, stony***

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

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

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

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

#### ***Lyman-Tunbridge-Rock outcrop complex***

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

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

### ***Marlow Series***

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

### ***Colton Series***

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

## 5.0 REFERENCES

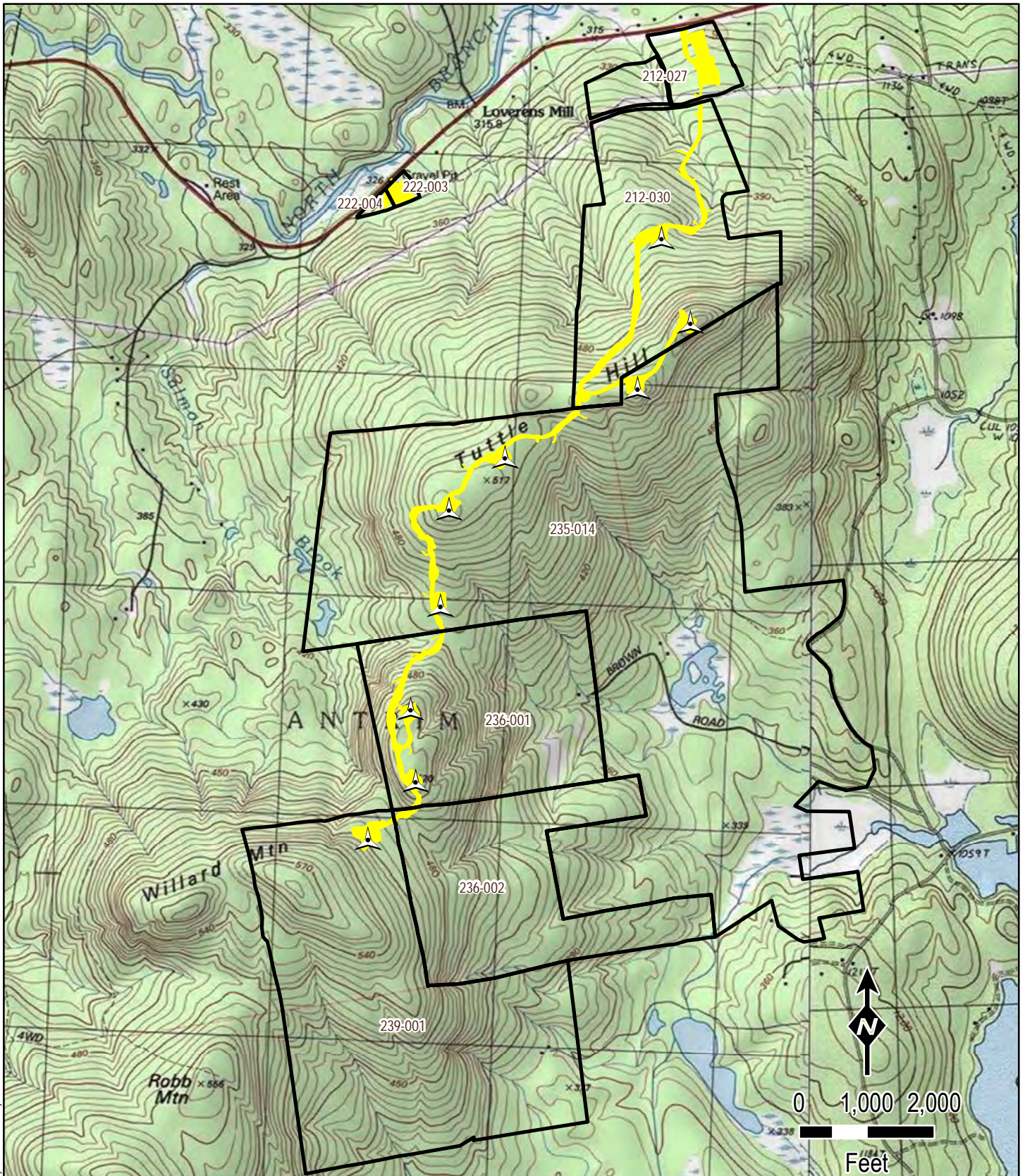
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**ATTACHMENT A  
PROJECT MAPPING**




V:\PROJECTS\AUGUSTA\ANTRIM\Figure C-1 Project Location Map.mxd



- Legend
-  Proposed WTG
  -  Project Footprint
  -  Project Parcels

## Antrim Wind Energy

**ANTRIM WIND  
ENERGY PROJECT**  
*354 KEENE ROAD, ANTRIM, NH*  
**Figure 1**  
Project Location Map

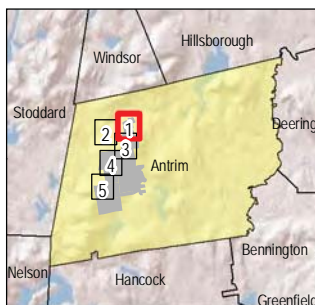
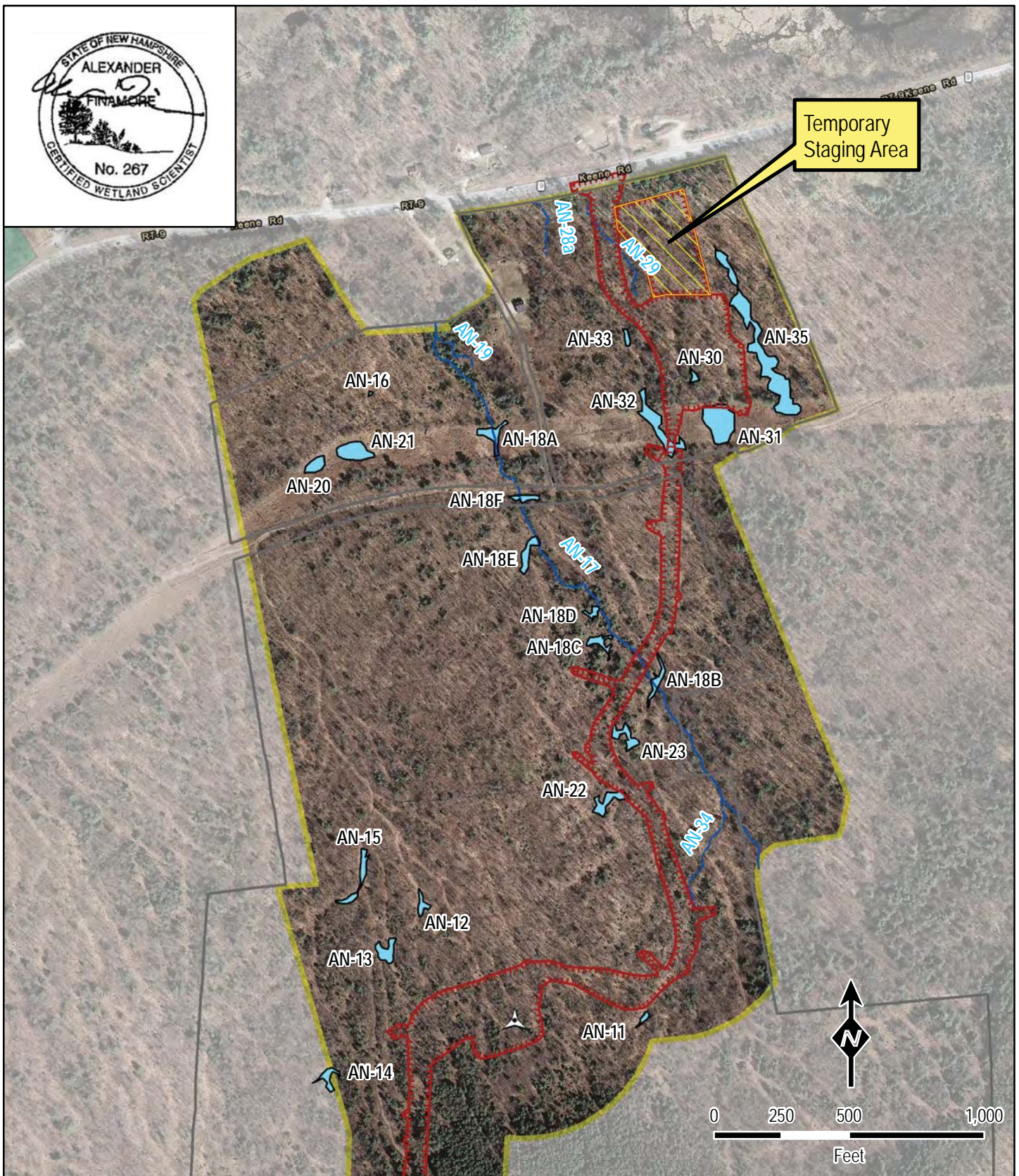
Produced by: 

1/29/2015





Temporary  
Staging Area



### Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Project Parcels
- Existing Conserved Lands
- Resource Survey Area
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label

## Antrim Wind Energy

### ANTRIM WIND ENERGY PROJECT

ANTRIM, NH

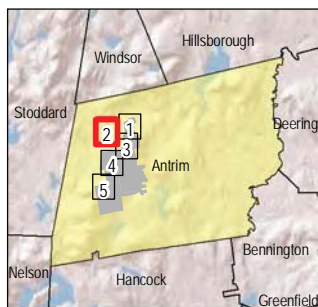
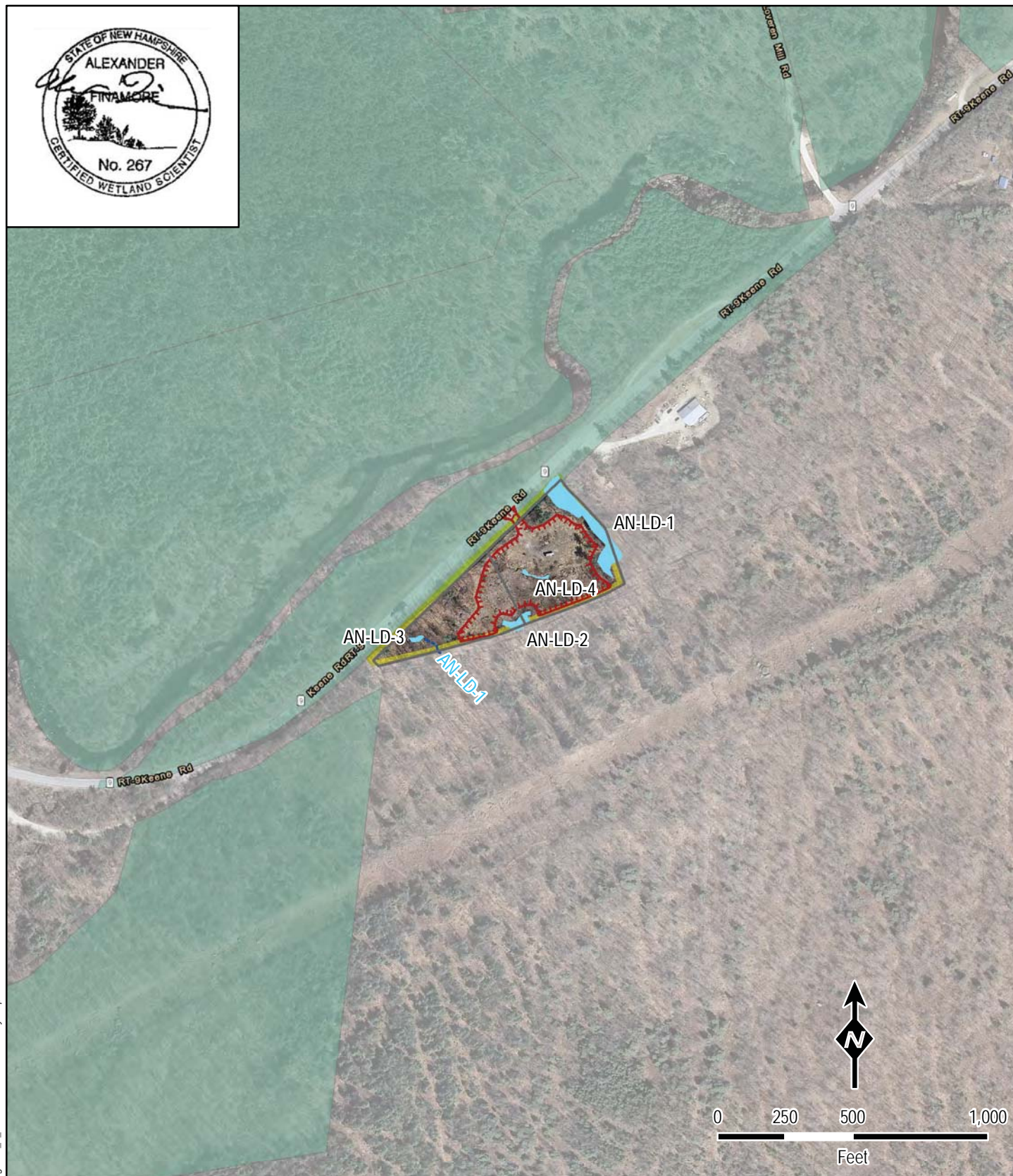
### Figure 2

Natural Resource Survey Map  
Map 1 of 5

Produced by: CTRC

7/6/2015





### Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Project Parcels
- Existing Conserved Lands
- Resource Survey Area
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label

## Antrim Wind Energy

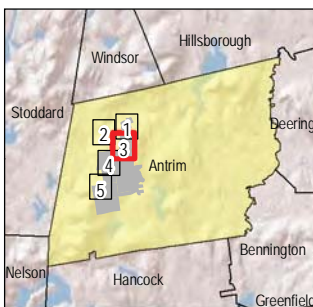
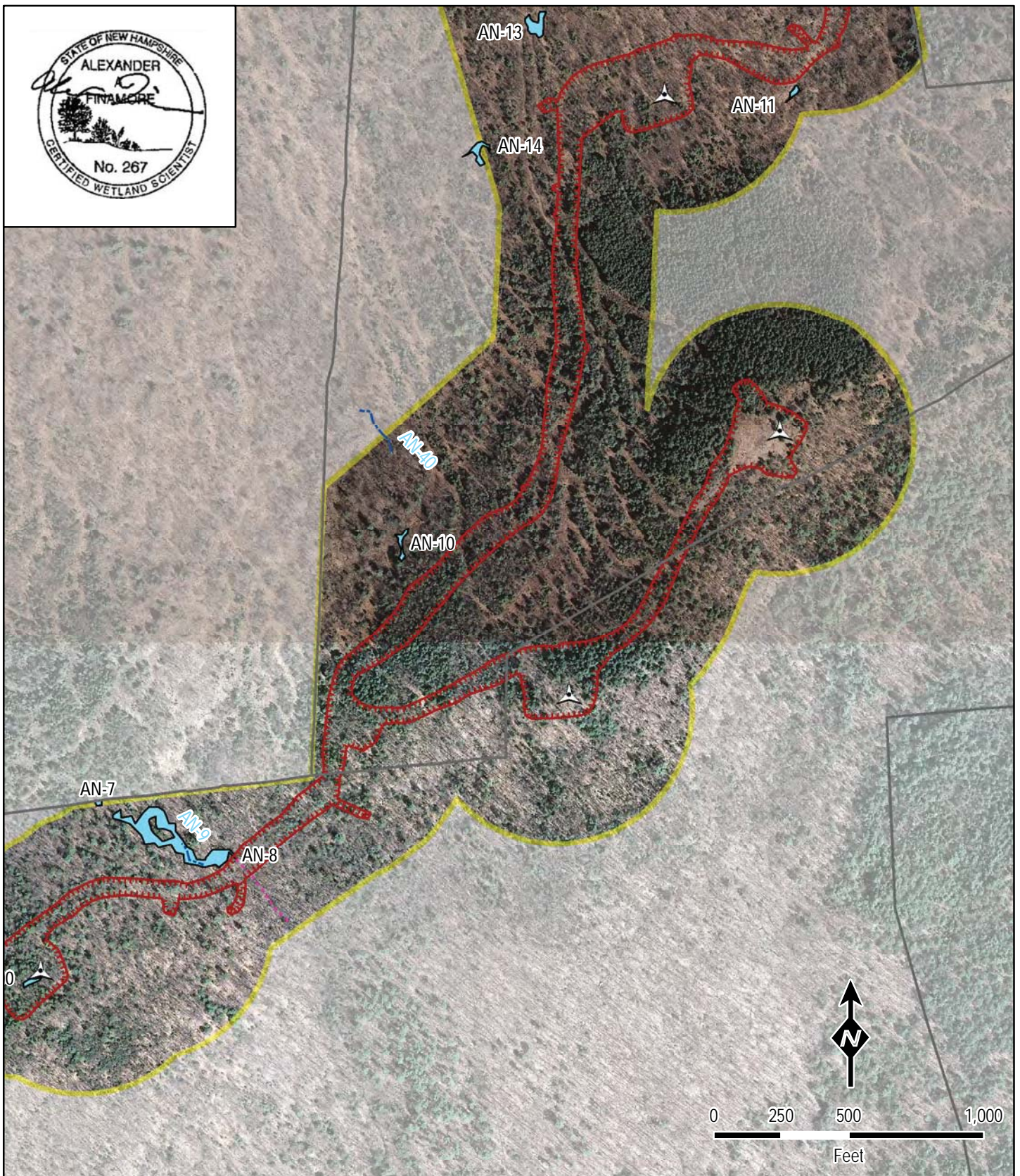
### ANTRIM WIND ENERGY PROJECT ANTRIM, NH

Figure 2  
Natural Resource Survey Map  
Map 2 of 5

Produced by: CTRC

7/6/2015





### Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Project Parcels
- Existing Conserved Lands
- Resource Survey Area
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label

## Antrim Wind Energy

### ANTRIM WIND ENERGY PROJECT

ANTRIM, NH

### Figure 2

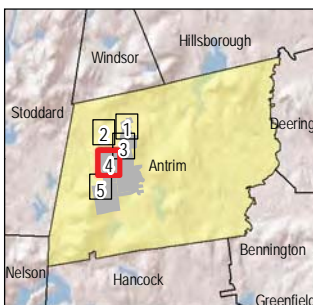
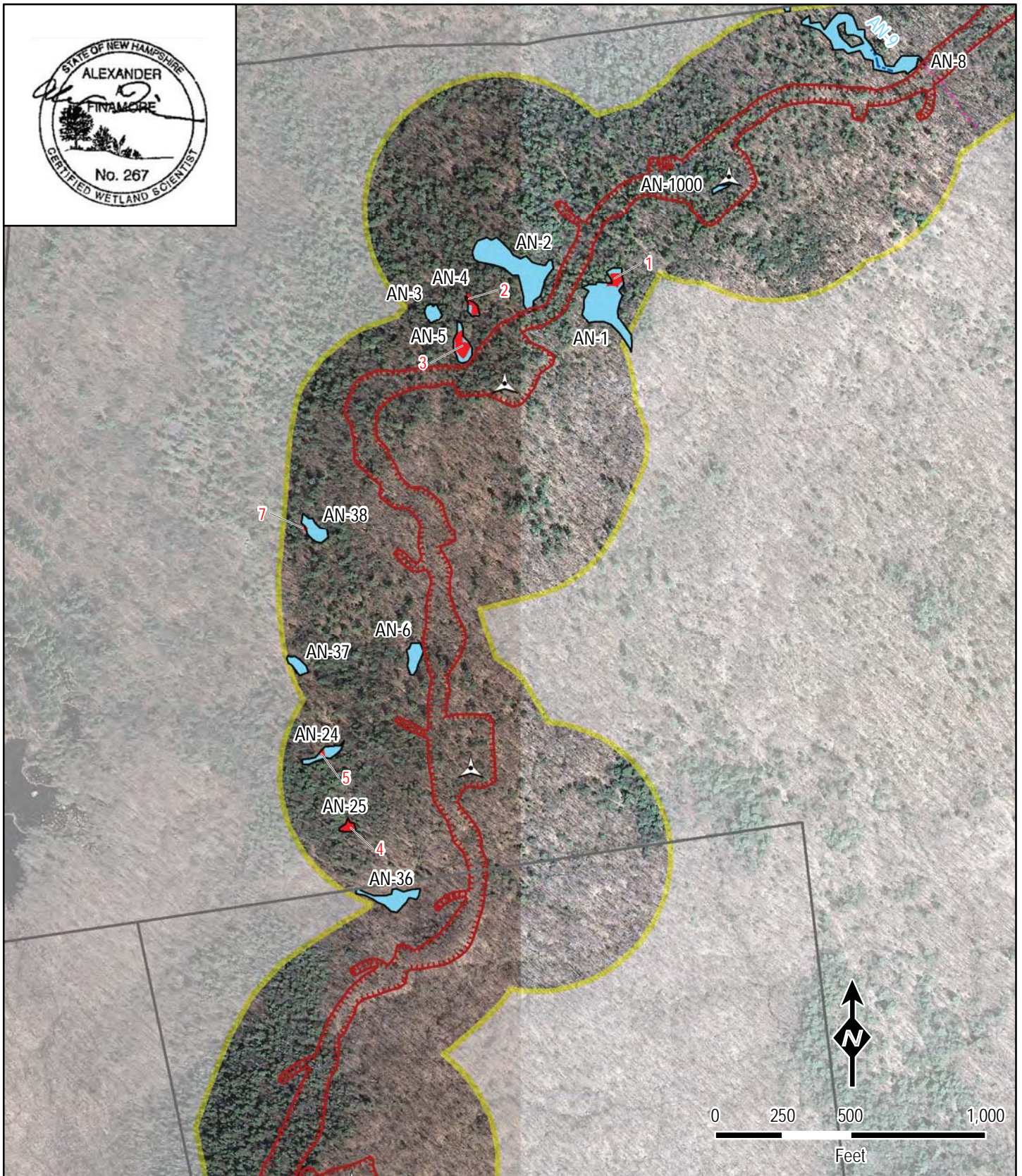
Natural Resource Survey Map

Map 3 of 5

Produced by: CTRC

7/6/2015





### Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Project Parcels
- Existing Conserved Lands
- Resource Survey Area
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label

## Antrim Wind Energy

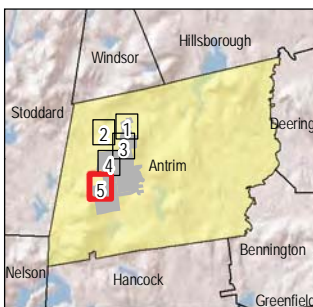
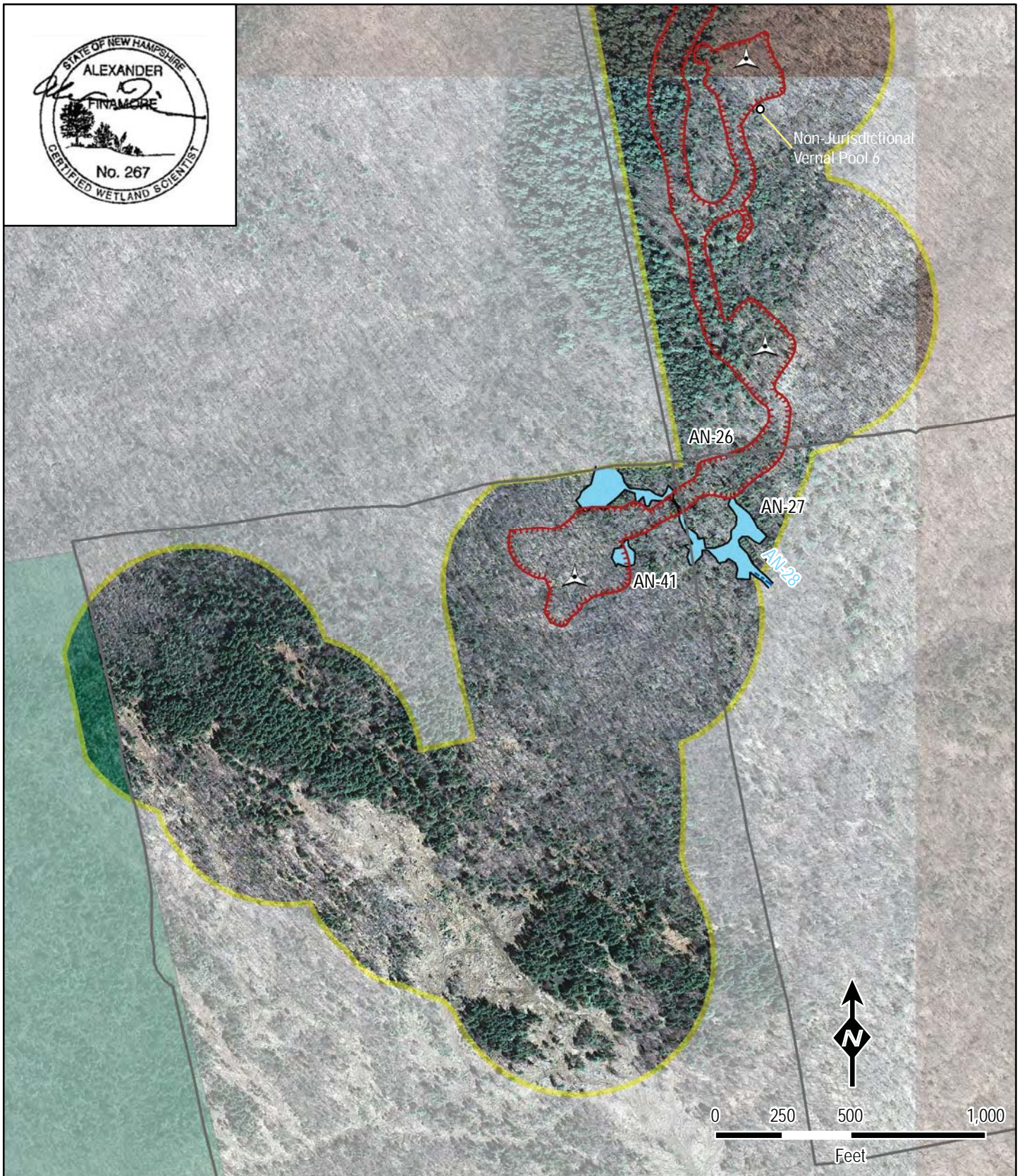
### ANTRIM WIND ENERGY PROJECT ANTRIM, NH Figure 2

Natural Resource Survey Map  
Map 4 of 5

Produced by: CTRC

7/6/2015





### Legend

- Proposed WTG Location
- Proposed Disturbance Area
- Vernal Pool
- Project Parcels
- Existing Conserved Lands
- Resource Survey Area
- Wetlands
- Wetland Boundary
- Perennial Stream
- Intermittent Stream
- Drainage
- Stream Label
- Wetland Label

## Antrim Wind Energy

### ANTRIM WIND ENERGY PROJECT ANTRIM, NH

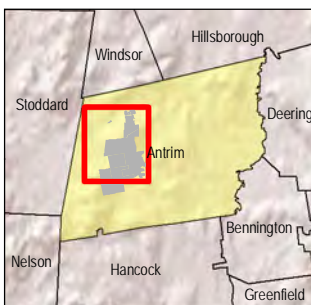
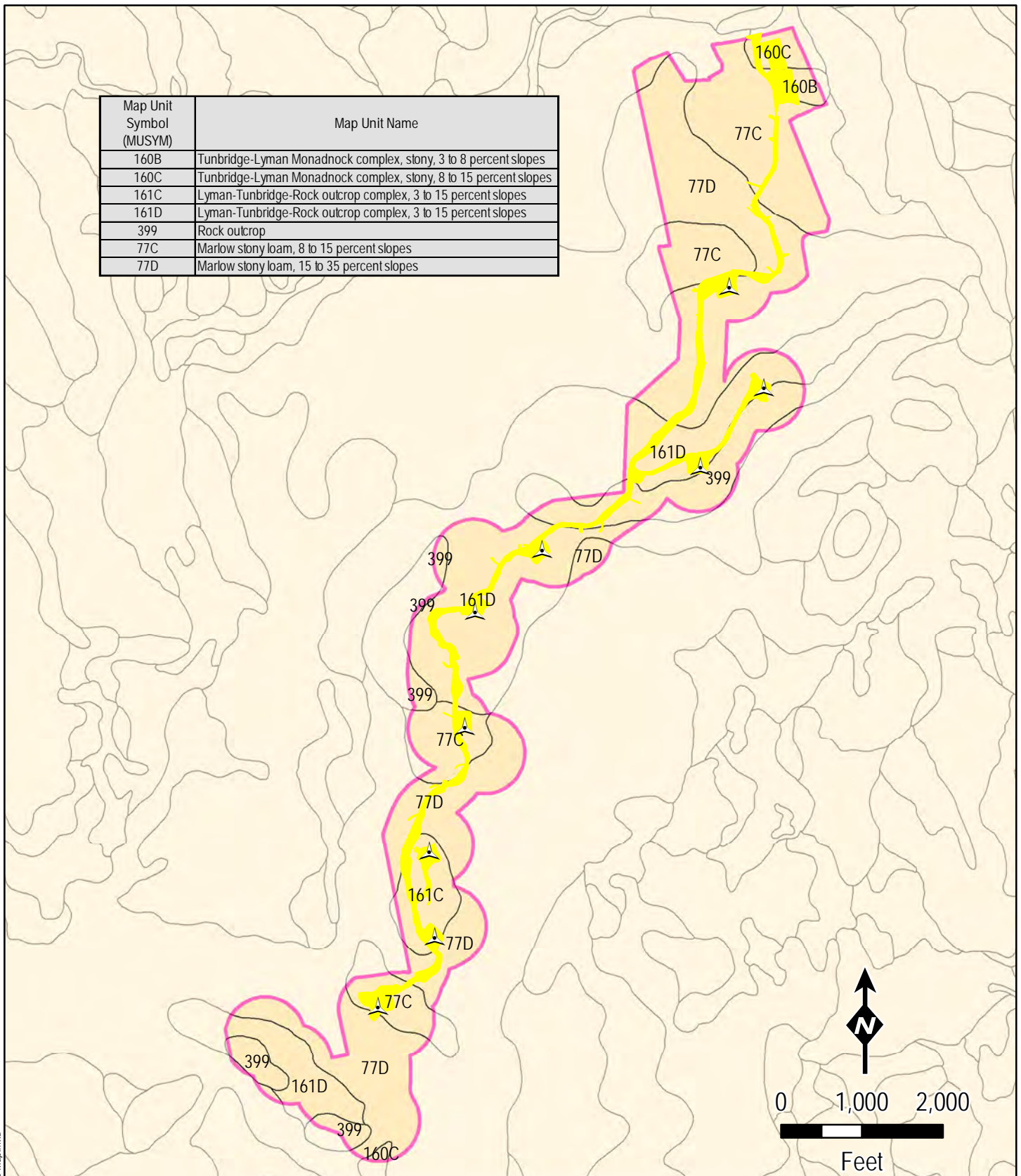
Figure 2  
Natural Resource Survey Map  
Map 5 of 5

Produced by: CTRC





7/6/2015



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: 

7/8/2015



**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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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:**

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 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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	83 = Total Cover			<b>Prevalence Index worksheet:</b> 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 <b>Column Totals:</b> 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%		
7. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum (Plot size: 5')</b>	18 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	31 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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:

AN1 Upland

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

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-6	10YR	3/2	100%				Loam	
6-7	2.5Y	5/3	100%				Fine Loamy Sand	
7-16	10YR	4/3	100%				Fine Sandy Loam	
16+	2.5Y	5/6	100%				Fine Sandy Loam	

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

☐ 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)

<sup>3</sup>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:



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"/>	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 Bat Radar location			

## Hydrology

<b>Wetland Hydrology Indicators:</b> 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 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 type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <u>        </u> Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>9</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: AN2 Wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Picea mariana</i>	25	<input checked="" type="checkbox"/> 55.6%	FACW-
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%	
45 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Picea mariana</i>	10	<input checked="" type="checkbox"/> 33.3%	FACW-
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%	
30 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Eriophorum virginicum</i>	100	<input checked="" type="checkbox"/> 90.9%	OBL
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%	
110 = 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: 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>100</u>	x 1 = <u>100</u>
FACW species <u>55</u>	x 2 = <u>110</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>185</u> (A)	<u>300</u> (B)
Prevalence Index = B/A = <u>1.622</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

AN2 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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	2/1	100%					Muck		
8-15	2.5Y	5/1	100%					Sand		

^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:



# 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 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.)

## Hydrology

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: 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>			<b>Prevalence Index worksheet:</b> 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>			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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>			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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			<sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type				
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	

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

<sup>3</sup>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

<b>Wetland Hydrology Indicators:</b> 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)
<b>Field Observations:</b> 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>		
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	20 = Total Cover			<b>Prevalence Index worksheet:</b>
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)
<b>Herb Stratum (Plot size: 5')</b>	40 = Total Cover			Prevalence Index = B/A = <u>2.053</u>
1. <u>Osmunda cinnamomea</u>	15	<input checked="" type="checkbox"/> 42.9%	FACW	<b>Hydrophytic Vegetation Indicators:</b>
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 <sup>1</sup>
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
6. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	0	<input type="checkbox"/> 0.0%		<b>Definitions of Vegetation Strata:</b>
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.
<b>Woody Vine Stratum (Plot size: _____)</b>	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.

[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: 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"/> 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.) bouldery	

## Hydrology

<b>Wetland Hydrology Indicators:</b> 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"/> 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)	
<b>Field Observations:</b> 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: AN3 Upland

Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b> 99 = Total Cover				<b>Prevalence Index worksheet:</b> 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>115</u> x 4 = <u>460</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>115</u> (A) <u>460</u> (B)  Prevalence Index = B/A = <u>4.000</u>
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%		
<b>Herb Stratum (Plot size: 5')</b> 10 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
<b>Woody Vine Stratum (Plot size: _____)</b> 6 = Total Cover				<b>Definitions of Vegetation Strata:</b>  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				<b>Hydrophytic Vegetation Present?</b> 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]



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:		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 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 <input checked="" type="radio"/> No <input type="radio"/>	
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)
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%		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      0      x 1 =      0 FACW species      35      x 2 =      70 FAC species      65      x 3 =      195 FACU species      0      x 4 =      0 UPL species      0      x 5 =      0 Column Totals:      100      (A)      265      (B) Prevalence Index = B/A =      2.650
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			<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		<b>Definitions of Vegetation Strata:</b> 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.
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			<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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%		
12. _____	0	<input type="checkbox"/> 0.0%		
Woody Vine Stratum (Plot size: _____)	5 = 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%		
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. _____	0	<input type="checkbox"/> 0.0%		
14. _____	0	<input type="checkbox"/> 0.0%		
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19. _____	0	<input type="checkbox"/> 0.0%		
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28. _____	0	<input type="checkbox"/> 0.0%		
29. _____	0	<input type="checkbox"/> 0.0%		
30. _____	0	<input type="checkbox"/> 0.0%		
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216. _____	0	<input type="checkbox"/> 0.0%		
217. _____	0	<input type="checkbox"/> 0.0%		
218. _____	0	<input type="checkbox"/> 0.0%		
219. _____	0			

Soil

Sampling Point: AN4 Wet

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

Depth (inches)	Matrix		Redox Features						Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>						
0-6	10YR	3/2	100%						Loam		
6-10	2.5Y	4/1	100%						Fine Sandy Loam		
10+										Bedrock	

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

<sup>2</sup>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 : <sup>3</sup>

☐ 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: bedrock

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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Quercus rubra</u>	30	<input checked="" type="checkbox"/> 37.5%	FACU-	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>14.3%</u> (A/B)
2. <u>Pinus strobus</u>	25	<input checked="" type="checkbox"/> 31.3%	FACU	
3. <u>Picea rubens</u>	25	<input checked="" type="checkbox"/> 31.3%	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%	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	<b>80 = Total Cover</b>			<b>Prevalence Index worksheet:</b> 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>5</u> x <u>3</u> = <u>15</u> FACU species <u>135</u> x <u>4</u> = <u>540</u> UPL species <u>0</u> x <u>5</u> = <u>0</u> <b>Column Total s:</b> <u>140</u> (A) <u>555</u> (B)  Prevalence Index = B/A = <u>3.964</u>
1. <u>Betula papyrifera</u>	5	<input type="checkbox"/> 10.0%	FACU	
2. <u>Picea rubens</u>	15	<input checked="" type="checkbox"/> 30.0%	FACU	
3. <u>Vaccinium angustifolium</u>	25	<input checked="" type="checkbox"/> 50.0%	FACU-	
4. <u>Fagus grandifolia</u>	5	<input type="checkbox"/> 10.0%	FACU	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum (Plot size: 5')</b>	<b>50 = Total Cover</b>			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Lycopodium obscurum</u>	5	<input checked="" type="checkbox"/> 50.0%	FACU	
2. <u>Abies balsamea</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%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>	<b>10 = Total Cover</b>			<b>Definitions of Vegetation Strata:</b>  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%	_____	
	<b>0 = Total Cover</b>			<b>Hydrophytic Vegetation Present?</b> 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]



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

<b>Wetland Hydrology Indicators:</b> 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)	
<b>Field Observations:</b> 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 <input checked="" type="radio"/> No <input type="radio"/>			
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	15 = Total Cover			<b>Prevalence Index worksheet:</b>
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)
<b>Herb Stratum (Plot size: 5')</b>	40 = Total Cover			Prevalence Index = B/A = <u>2.207</u>
1. <u>Scirpus cyperinus</u>	66	<input checked="" type="checkbox"/> 100.0% FACW+		<b>Hydrophytic Vegetation Indicators:</b>
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 <sup>1</sup>
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
6. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	0	<input type="checkbox"/> 0.0%		<b>Definitions of Vegetation Strata:</b>
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.
<b>Woody Vine Stratum (Plot size: _____)</b>	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.)				<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 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):	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: AN5 Upland

Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Picea rubens</u>	33	<input checked="" type="checkbox"/> 39.8%	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>	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%		
Sapling/Shrub Stratum (Plot size: 15') <div>83 = Total Cover</div>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      0      x 1 =      0 FACW species      5      x 2 =      10 FAC species      0      x 3 =      0 FACU species      94      x 4 =      376 UPL species      0      x 5 =      0 Column Total s:      99      (A)      386      (B)  Prevalence Index = B/A =      3.899
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%		
Herb Stratum (Plot size: 5') <div>5 = Total Cover</div>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
Woody Vine Stratum (Plot size: _____) <div>11 = Total Cover</div>				<b>Definitions of Vegetation Strata:</b>  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>0 = Total Cover</div>				<b>Hydrophytic Vegetation Present?</b> 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:

AN5 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 <sup>1</sup>	Loc <sup>2</sup>				
0-4	10YR	3/3						Loam		
4-10	2.5Y	5/1						Fine Loamy Sand		
10-16	10YR	4/4						Fine Sandy Loam		

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

<sup>3</sup>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:



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

<b>Wetland Hydrology Indicators:</b> 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 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 checked="" 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)	
<b>Field Observations:</b> 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 <input checked="" type="radio"/> No <input type="radio"/>	
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	50 = Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      15      x 1 =      15 FACW species      111      x 2 =      222 FAC species      80      x 3 =      240 FACU species      0      x 4 =      0 UPL species      0      x 5 =      0 <b>Column Totals:</b> 206      (A)      477      (B)  Prevalence Index = B/A =      2.316
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%		
<b>Herb Stratum (Plot size: 5')</b>	55 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	101 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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	Rel.Strat. 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	80 = Total Cover			<b>Prevalence Index worksheet:</b> 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      73      x 4 =      292 UPL species      5      x 5 =      25 <b>Column Totals:</b> 108      (A)      407      (B)  Prevalence Index = B/A =      3.769
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%		
<b>Herb Stratum (Plot size: 5')</b>	13 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	15 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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

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

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-4	10YR	3/2	100%				Loam	
4-6	2.5Y	5/1	100%				Sandy Loam	
6-15	10YR	4/6	100%				Sandy Loam	

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

<sup>2</sup>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 : <sup>3</sup>

☐ 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)

<sup>3</sup>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:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):	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 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 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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	25 = Total Cover		<b>Prevalence Index worksheet:</b> 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-	
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%	
<b>Herb Stratum (Plot size: 5')</b>	151 = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Osmunda cinnamomea</u>	66	<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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	66 = Total Cover		<b>Definitions of Vegetation Strata:</b>  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		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>          			

\*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				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
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

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

<sup>2</sup>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 :

<sup>3</sup>

☐ 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	73 = Total Cover			<b>Prevalence Index worksheet:</b> 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>25</u> x 3 = <u>75</u> FACU species <u>121</u> x 4 = <u>484</u> UPL species <u>5</u> x 5 = <u>25</u> <b>Column Totals:</b> <u>151</u> (A) <u>584</u> (B)  Prevalence Index = B/A = <u>3.868</u>
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%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum (Plot size: 5')</b>	43 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata:</b>  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>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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	35 = Total Cover			<b>Hydrophytic Vegetation Present?</b> 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: 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 <sup>1</sup>	Loc <sup>2</sup>				
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	

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

<sup>2</sup> 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 :<sup>3</sup>

☐ 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)

<sup>3</sup>Indicators 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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	Rel.Strat. Cover	Indicator Status
1. <i>Betula alleghaniensis</i>	25	<input checked="" type="checkbox"/> 50.0%	FAC
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%	
50 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
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%	
21 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Rel.Strat. 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%	
91 = 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: 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>0</u>	x 1 = <u>0</u>
FACW species <u>91</u>	x 2 = <u>182</u>
FAC species <u>63</u>	x 3 = <u>189</u>
FACU species <u>3</u>	x 4 = <u>12</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>157</u> (A)	<u>383</u> (B)
Prevalence Index = B/A = <u>2.439</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	88 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	50 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	27 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 ☒ No ☐ Depth (inches): 1

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:

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

# VEGETATION - Use scientific names of plants

Sampling Point: **AN10 Wet**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Betula alleghaniensis</u>	15	<input checked="" type="checkbox"/> 50.0%	FAC
2. <u>Fraxinus pennsylvanica</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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	30 = Total Cover		
1. <u>Acer pensylvanicum</u>	50	<input checked="" type="checkbox"/> 76.9%	FACU
2. <u>Betula alleghaniensis</u>	15	<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%	
<b>Herb Stratum (Plot size: 5')</b>	65 = Total Cover		
1. <u>Osmunda cinnamomea</u>	33	<input checked="" type="checkbox"/> 42.3%	FACW
2. <u>Impatiens capensis</u>	40	<input checked="" type="checkbox"/> 51.3%	FACW
3. <u>Carex lurida</u>	5	<input type="checkbox"/> 6.4%	OBL
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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	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		

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>88</u>	x 2 = <u>176</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>173</u> (A)	<u>471</u> (B)
Prevalence Index = B/A = <u>2.723</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

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 <sup>1</sup>	Loc <sup>2</sup>					
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+											

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

<sup>2</sup>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 :<sup>3</sup>  
☐ 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)

<sup>3</sup>Indicators 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	95 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	65 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	80 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 ☐ 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

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)
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%		
0 = Total Cover				<b>Prevalence Index worksheet:</b>
Sapling/Shrub Stratum (Plot size: 15')				Total % Cover of: Multiply by:
1. <u>Spiraea tomentosa</u>	15	<input checked="" type="checkbox"/> 75.0% FACW		OBL species <u>25</u> x 1 = <u>25</u>
2. <u>Betula alleghaniensis</u>	5	<input checked="" type="checkbox"/> 25.0% FAC		FACW species <u>63</u> x 2 = <u>126</u>
3. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>5</u> x 3 = <u>15</u>
4. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		UPL species <u>0</u> x 5 = <u>0</u>
6. _____	0	<input type="checkbox"/> 0.0%		Column Totals: <u>93</u> (A) <u>166</u> (B)
7. _____	0	<input type="checkbox"/> 0.0%		Prevalence Index = B/A = <u>1.785</u>
20 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b>
Herb Stratum (Plot size: 5')				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
1. <u>Onoclea sensibilis</u>	20	<input checked="" type="checkbox"/> 27.4% FACW		<input checked="" type="checkbox"/> Dominance Test is > 50%
2. <u>Scirpus cyperinus</u>	20	<input checked="" type="checkbox"/> 27.4% FACW+		<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
3. <u>Carex crinita</u>	25	<input checked="" type="checkbox"/> 34.2% OBL		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. <u>Osmunda cinnamomea</u>	5	<input type="checkbox"/> 6.8% FACW		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. <u>Calamagrostis canadensis</u>	3	<input type="checkbox"/> 4.1% FACW+		
6. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7. _____	0	<input type="checkbox"/> 0.0%		<b>Definitions of Vegetation Strata:</b>
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%		
73 = 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				

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

<b>Wetland Hydrology Indicators:</b> 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"/> 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)	
<b>Field Observations:</b> 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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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	Loc <sup>2</sup>					
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		

<sup>1</sup>Type:

C=Concentration.

D=Depletion.

RM=Reduced Matrix,

CS=Covered or Coated Sand Grains

<sup>2</sup>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 :

☐ 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)

<sup>3</sup>Indicators 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):	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	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 alba</u>	25	<input checked="" type="checkbox"/> 33.3% FACW+	
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%	
75 = Total Cover			
Herb Stratum (Plot size: 5')			
1. <u>Carex crinita</u>	15	<input checked="" type="checkbox"/> 23.1% OBL	
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%	
65 = 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: 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>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>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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%	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	25 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%	_____	
<b>Herb Stratum (Plot size: 5')</b>	45 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>	118 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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:   an12 upland

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

Depth (inches)	Matrix		Redox Features				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0-4	10YR	3/2	100%					Loam	
4-5	2.5Y	5/1	100%					Fine Sandy Loam	
5-12	10YR	4/3	100%					Fine Sandy Loam	

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

<sup>2</sup> 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 : <sup>3</sup>

☐ 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?

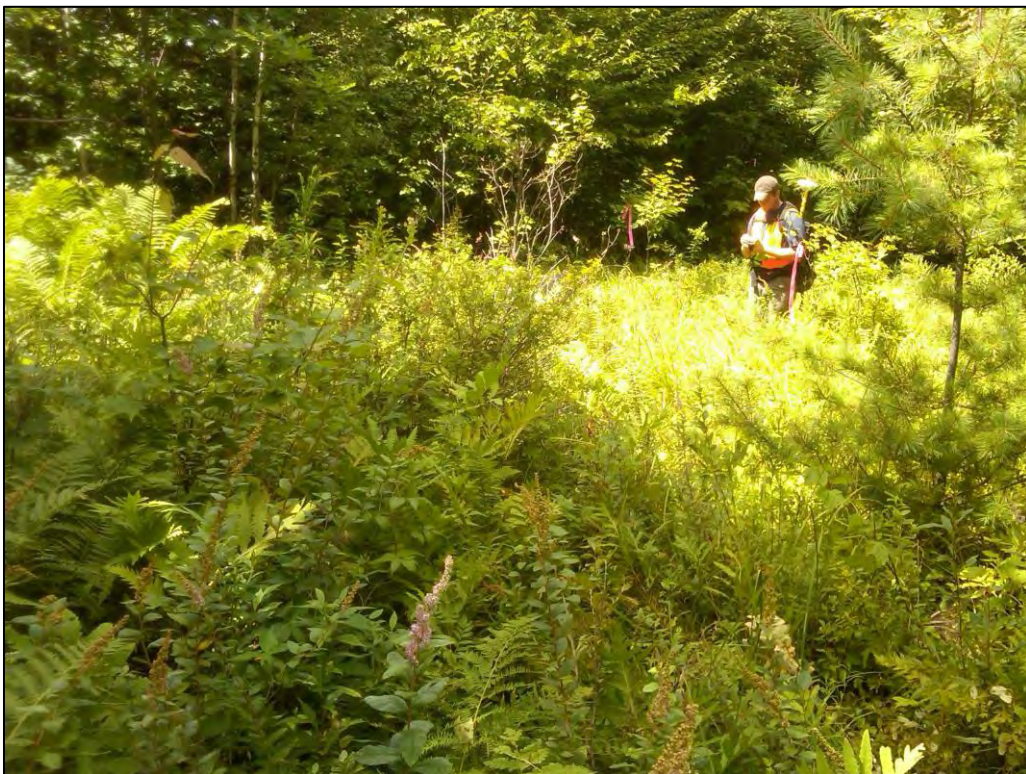
Yes☐

No☒

Remarks:



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

<b>Wetland Hydrology Indicators:</b> 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)	
<b>Field Observations:</b> 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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b> 15 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>193</u> x 4 = <u>772</u> UPL species <u>5</u> x 5 = <u>25</u> <b>Column Total s:</b> <u>218</u> (A) <u>837</u> (B)  Prevalence Index = B/A = <u>3.839</u>
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%	_____	
<b>Herb Stratum (Plot size: 5')</b> 103 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%	_____	<b>Definitions of Vegetation Strata:</b>  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%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b> 100 = 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				<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	40 = Total Cover			<b>Prevalence Index worksheet:</b> 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 <b>Column Totals:</b> 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%		
<b>Herb Stratum (Plot size: 5')</b>	48 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	35 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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')			
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')			
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: _____)			
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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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:	1 (A)
2. <u>Fraxinus americana</u>	25	<input checked="" type="checkbox"/> 41.7%	FACU	Total Number of Dominant Species Across All Strata:	4 (B)
3. <u>Betula alleghaniensis</u>	10	<input type="checkbox"/> 16.7%	FAC	Percent of dominant Species That Are OBL, FACW, or FAC:	25.0% (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%			
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	60 = Total Cover			<b>Prevalence Index worksheet:</b>	
1. <u>Acer pensylvanicum</u>	50	<input checked="" type="checkbox"/> 83.3%	FACU	Total % Cover of:	Multiply by:
2. <u>Fagus grandifolia</u>	5	<input type="checkbox"/> 8.3%	FACU	OBL species	0 x 1 = 0
3. <u>Picea rubens</u>	5	<input type="checkbox"/> 8.3%	FACU	FACW species	0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%		FAC species	15 x 3 = 45
5. _____	0	<input type="checkbox"/> 0.0%		FACU species	112 x 4 = 448
6. _____	0	<input type="checkbox"/> 0.0%		UPL species	1 x 5 = 5
7. _____	0	<input type="checkbox"/> 0.0%		Column Totals:	128 (A) 498 (B)
	60 = Total Cover			Prevalence Index = B/A = 3.891	
<b>Herb Stratum (Plot size: 5')</b>				<b>Hydrophytic Vegetation Indicators:</b>	
1. <u>Fraxinus americana</u>	1	<input type="checkbox"/> 12.5%	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <u>Acer saccharum</u>	1	<input type="checkbox"/> 12.5%	FACU-	<input type="checkbox"/> Dominance Test is > 50%	
3. <u>Malanthemum canadense</u>	5	<input checked="" type="checkbox"/> 62.5%	FAC-	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
4. <u>Polygonatum pubescens</u>	1	<input type="checkbox"/> 12.5%	UPL	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> 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%			
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%			
<b>Woody Vine Stratum (Plot size: _____)</b>	8 = Total Cover			<b>Definitions of Vegetation Strata:</b>	
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.	
2. _____	0	<input type="checkbox"/> 0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
3. _____	0	<input type="checkbox"/> 0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4. _____	0	<input type="checkbox"/> 0.0%		Woody vine - All woody vines greater than 3.28 ft in height.	
	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:

an15 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 <sup>1</sup>	Loc <sup>2</sup>					
0-8	10YR	3/2	100%						Loam		
8-16	10YR	4/3	100%						Fine Sandy Loam		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains   <sup>2</sup>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 :<sup>3</sup>

☐ 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)

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

Restrictive Layer (if observed):

Type:  
Refusal

Depth (inches):  
16

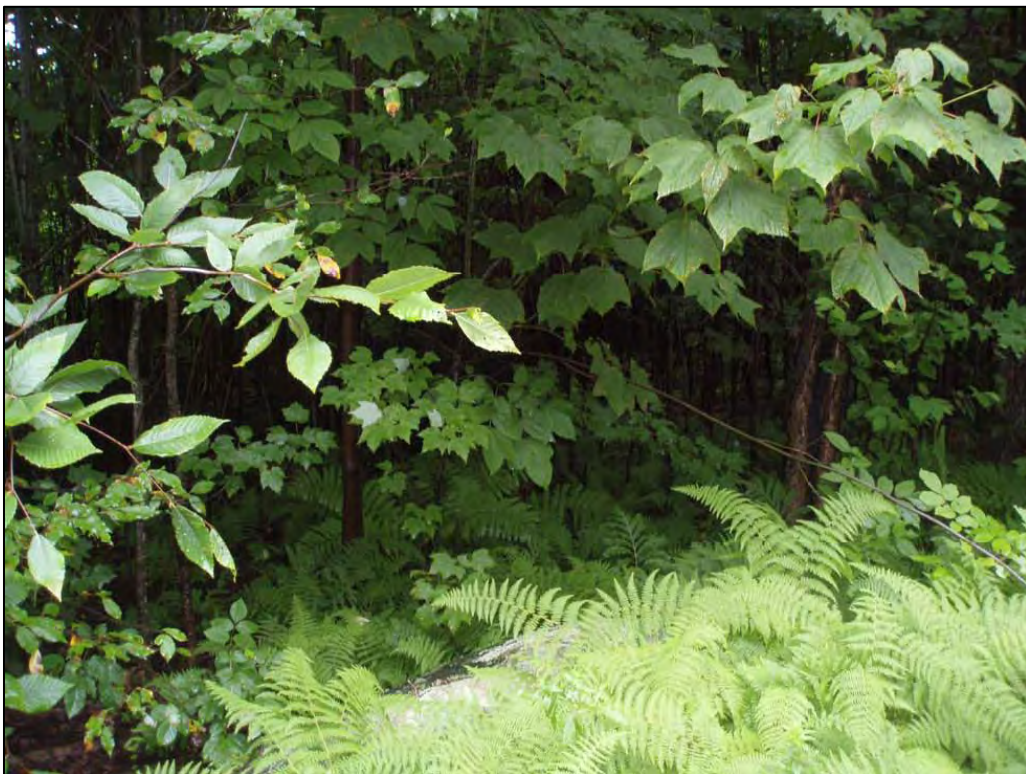
Hydric Soil Present?

Yes No

Remarks:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):		<b>Wetland Hydrology Present?</b> 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: 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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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)	

<b>Field Observations:</b>			
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%	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	30 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%	_____	
<b>Herb Stratum (Plot size: 5')</b>	51 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>	110 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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: an16 upland

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

Depth (inches)	Matrix		Redox Features				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0-4	10YR	3/2	100%					Loam	
4-6	10YR	5/8	100%					Fine Sandy Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

☐ 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)

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

Restrictive Layer (if observed):

Type: stone refusal

Depth (inches): 6

Hydric Soil Present? Yes No

Remarks:

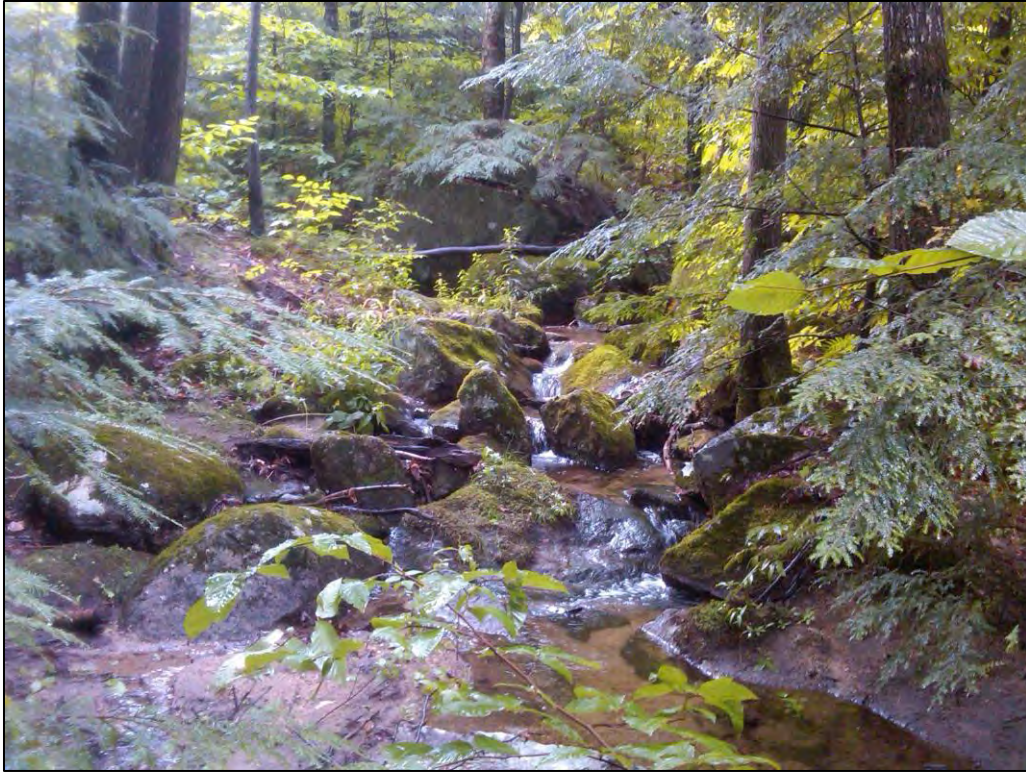


AN16 Wetland



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):		<b>Wetland Hydrology Present?</b> 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

Sampling Point: an18a 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>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%	
13 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
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%	
86 = 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>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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0-10	10YR	3/2	100%					Sandy Loam	alluvial soils
10-20	2.5Y	4/1	100%					gravelly sand	

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

<sup>2</sup>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 : <sup>3</sup>

☐ 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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: an18a 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: <u>1</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      0      x 1 =      0 FACW species      50      x 2 =      100 FAC species      0      x 3 =      0 FACU species      8      x 4 =      32 UPL species      50      x 5 =      250 Column Totals:      108      (A)      382      (B) Prevalence Index = B/A =      3.537
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: _____)	0 = Total Cover			
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
Herb Stratum (Plot size: 5' _____)	0 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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. Phalaris arundinacea	50	<input checked="" type="checkbox"/> 46.3% FACW+		
2. Dennstaedtia punctilobula	50	<input checked="" type="checkbox"/> 46.3% UPL		
3. Solidago canadensis	8	<input type="checkbox"/> 7.4% FACU		
4. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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: _____)	108 = 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 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: an18b 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>	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%	
48 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
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%	
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%	
135 = 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>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>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: an18b upland

Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Fagus grandifolia</i>	25	<input checked="" type="checkbox"/> 41.7%	FACU
2. <i>Tsuga canadensis</i>	25	<input checked="" type="checkbox"/> 41.7%	FACU
3. <i>Abies balsamea</i>	10	<input type="checkbox"/> 16.7%	FAC
4. <i>Quercus rubra</i>	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%	
60 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Betula alleghaniensis</i>	25	<input checked="" type="checkbox"/> 45.5%	FAC
2. <i>Acer saccharum</i>	25	<input checked="" type="checkbox"/> 45.5%	FACU-
3. <i>Pinus strobus</i>	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%	
55 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <i>Aralia nudicaulis</i>	33	<input checked="" type="checkbox"/> 33.7%	FACU
2. <i>Thelypteris noveboracensis</i>	60	<input checked="" type="checkbox"/> 61.2%	FAC
3. <i>Polygonatum pubescens</i>	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%	
98 = 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: 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>0</u>	x 2 = <u>0</u>
FAC species <u>95</u>	x 3 = <u>285</u>
FACU species <u>113</u>	x 4 = <u>452</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>213</u> (A)	<u>762</u> (B)
Prevalence Index = B/A = <u>3.577</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):	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: 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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		<b>45 = Total Cover</b>	
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%	
<b>Herb Stratum (Plot size: 5')</b>		<b>45 = Total Cover</b>	
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%	
<b>Woody Vine Stratum (Plot size: _____)</b>		<b>63 = Total Cover</b>	
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%	
		<b>0 = Total Cover</b>	

**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 <u>1</u> = <u>0</u>
FACW species <u>0</u>	x <u>2</u> = <u>0</u>
FAC species <u>25</u>	x <u>3</u> = <u>75</u>
FACU species <u>78</u>	x <u>4</u> = <u>312</u>
UPL species <u>50</u>	x <u>5</u> = <u>250</u>
<b>Column Total s:</b> <u>153</u> (A)	<u>637</u> (B)
Prevalence Index = B/A = <u>4.163</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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 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 <sup>1</sup>	Loc <sup>2</sup>					
0-6	10YR	3/2	100%						Fine Sandy Loam		
6-10	2.5Y	5/1	100%						Fine Sandy Loam		
10-14	10YR	4/3	100%						Fine Sandy Loam		

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

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

Restrictive Layer (if observed):

Type:

Boulders

Depth (inches):

14

Hydric Soil Present?

Yes☐

No☒

Remarks:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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	Dominance Test worksheet:
1. <u>Tsuga canadensis</u>	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>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	<b>76 = Total Cover</b>			<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>33</u> x <u>2</u> = <u>66</u> FAC species <u>30</u> x <u>3</u> = <u>90</u> FACU species <u>106</u> x <u>4</u> = <u>424</u> UPL species <u>25</u> x <u>5</u> = <u>125</u> <b>Column Totals:</b> <u>194</u> (A) <u>705</u> (B)  Prevalence Index = B/A = <u>3.634</u>
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%		
<b>Herb Stratum (Plot size: 5')</b>	<b>75 = Total Cover</b>			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	<b>43 = Total Cover</b>			<b>Definitions of Vegetation Strata:</b>  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%		
	<b>0 = Total Cover</b>			<b>Hydrophytic Vegetation Present?</b> 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 ☐ 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: **AN18e Wetland**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Fraxinus pennsylvanica</u>	15	<input checked="" type="checkbox"/> 30.0%	FACW
2. <u>Acer rubrum</u>	20	<input checked="" type="checkbox"/> 40.0%	FAC
3. <u>Betula alleghaniensis</u>	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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		<b>50 = Total Cover</b>	
1. <u>Betula alleghaniensis</u>	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%	
<b>Herb Stratum (Plot size: 5')</b>		<b>50 = Total Cover</b>	
1. <u>Osmunda cinnamomea</u>	33	<input checked="" type="checkbox"/> 27.3%	FACW
2. <u>Onoclea sensibilis</u>	33	<input checked="" type="checkbox"/> 27.3%	FACW
3. <u>Eupatoriadelphus dubius</u>	20	<input type="checkbox"/> 16.5%	FACW
4. <u>Impatiens capensis</u>	20	<input type="checkbox"/> 16.5%	FACW
5. <u>Coptis trifolia</u>	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%	
<b>Woody Vine Stratum (Plot size: _____)</b>		<b>121 = Total Cover</b>	
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%	
		<b>0 = Total Cover</b>	

**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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: **AN18e upland**

Tree Stratum (Plot size: 30' )		Absolute % Cover	Species? 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)			
2. <i>Tsuga canadensis</i>		33	<input checked="" type="checkbox"/> 43.4%	FACU	Total Number of Dominant Species Across All Strata: <u>7</u> (B)			
3. <i>Betula papyrifera</i>		10	<input type="checkbox"/> 13.2%	FACU	Percent of dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B)			
4. _____		0	<input type="checkbox"/> 0.0%	_____	Prevalence Index worksheet:			
5. _____		0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:			
6. _____		0	<input type="checkbox"/> 0.0%	_____	OBL spec ies	<u>0</u>	x 1 =	<u>0</u>
7. _____		0	<input type="checkbox"/> 0.0%	_____	FACW spec ies	<u>0</u>	x 2 =	<u>0</u>
Sapling/Shrub Stratum (Plot size: 15' )		76 = Total Cover			FAC spec ies	<u>30</u>	x 3 =	<u>90</u>
1. <i>Fagus grandifolia</i>		40	<input checked="" type="checkbox"/> 53.3%	FACU	FACU spec ies	<u>141</u>	x 4 =	<u>564</u>
2. <i>Acer pensylvanicum</i>		20	<input checked="" type="checkbox"/> 26.7%	FACU	UPL spec ies	<u>0</u>	x 5 =	<u>0</u>
3. <i>Betula alleghaniensis</i>		15	<input checked="" type="checkbox"/> 20.0%	FAC	Col umn Total s:	<u>171</u>	(A)	<u>654</u> (B)
4. _____		0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>3.825</u>			
5. _____		0	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Indicators:			
6. _____		0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation			
7. _____		0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%			
8. _____		0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>			
9. _____		0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
10. _____		0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
11. _____		0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
12. _____		0	<input type="checkbox"/> 0.0%	_____	Definitions of Vegetation Strata:			
Herb Stratum (Plot size: 5' )		75 = Total Cover			Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
1. <i>Thelypteris noveboracensis</i>		15	<input checked="" type="checkbox"/> 75.0%	FAC	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..			
2. <i>Quercus rubra</i>		5	<input checked="" type="checkbox"/> 25.0%	FACU-	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
3. _____		0	<input type="checkbox"/> 0.0%	_____	Woody vine - All woody vines greater than 3.28 ft in height.			
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			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]





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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)  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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	33 = Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>43</u> x 2 = <u>86</u> FAC species <u>68</u> x 3 = <u>204</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>111</u> (A) <u>290</u> (B)  Prevalence Index = B/A = <u>2.613</u>
1. <u>Betula alleghaniensis</u>	25	<input checked="" type="checkbox"/> 55.6%	FAC	
2. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 22.2%	FAC	
3. <u>Fraxinus pennsylvanica</u>	10	<input checked="" type="checkbox"/> 22.2%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum (Plot size: 5')</b>	45 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Onoclea sensibilis</u>	33	<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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	33 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

\*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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	3/2	100%						Sandy Loam	
8-16	2.5Y	5/2	80%	10YR	4/6	20%	C	M	Gravelly Sand	

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

<sup>2</sup>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 :

☐ 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)

<sup>3</sup>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:

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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: AN18f Upland

Tree Stratum (Plot size: 30')	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	40	<input checked="" type="checkbox"/> 50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. <u>Fraxinus pennsylvanica</u>	40	<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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	80 = Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>40</u> x <u>2</u> = <u>80</u> FAC species <u>70</u> x <u>3</u> = <u>210</u> FACU species <u>70</u> x <u>4</u> = <u>280</u> UPL species <u>5</u> x <u>5</u> = <u>25</u> <b>Column Totals:</b> <u>185</u> (A) <u>595</u> (B) Prevalence Index = B/A = <u>3.216</u>
1. <u>Ostrya virginiana</u>	25	<input checked="" type="checkbox"/> 31.3%	FACU-	
2. <u>Pinus strobus</u>	10	<input type="checkbox"/> 12.5%	FACU	
3. <u>Betula alleghaniensis</u>	10	<input type="checkbox"/> 12.5%	FAC	
4. <u>Fagus grandifolia</u>	15	<input type="checkbox"/> 18.8%	FACU	
5. <u>Acer pensylvanicum</u>	20	<input checked="" type="checkbox"/> 25.0%	FACU	
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
<b>Herb Stratum (Plot size: 5')</b>	80 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Malanthemum canadense</u>	20	<input checked="" type="checkbox"/> 80.0%	FAC-	
2. <u>Polygonatum pubescens</u>	5	<input checked="" type="checkbox"/> 20.0%	UPL	
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	25 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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]



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

<b>Wetland Hydrology Indicators:</b> 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)	
<b>Field Observations:</b> 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	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</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%	
<b>Sapling/Shrub Stratum (Plot size: _____)</b>	0 = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x <u>1</u> = <u>10</u> FACW species <u>103</u> x <u>2</u> = <u>206</u> FAC species <u>0</u> x <u>3</u> = <u>0</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> <b>Column Totals:</b> <u>113</u> (A) <u>216</u> (B) Prevalence Index = B/A = <u>1.912</u>
1. _____	0	<input type="checkbox"/> 0.0%	<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%	
<b>Herb Stratum (Plot size: 5' _____)</b>	0 = Total Cover		<b>Definitions of Vegetation Strata:</b>  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>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%	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	113 = 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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: 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')			
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')			
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: _____)			
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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

an20 upland

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

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-5	10YR	3/2	100%				Fine Sandy Loam	
5-10	10YR	4/4	100%				Fine Sandy Loam	
10-18	10YR	5/8	100%				Fine Sandy Loam	

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

<sup>2</sup>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 : <sup>3</sup>

☐ 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)

<sup>3</sup>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:





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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):	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: 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)																																																																																													
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3. <u>Spiraea alba</u>	5	<input checked="" type="checkbox"/> 33.3% FACW+																																																																																														
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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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	
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<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

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')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
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')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
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: _____)	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>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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

an22 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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	3/2	100%						Loam	
8-15	2.5Y	4/2	90%	10YR	5/8	10%	C	M	Fine Sandy Loam	

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

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

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: 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><b>Field Observations:</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/></p> <p>Water Table Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe)    <b>Yes</b> <input type="radio"/>    <b>No</b> <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><b>Wetland Hydrology Present?</b>    <b>Yes</b> <input type="radio"/>    <b>No</b> <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%	
Sapling/Shrub Stratum (Plot size: 15')		60 = Total Cover		
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%	
Herb Stratum (Plot size: 5')		50 = Total Cover		
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%	
Woody Vine Stratum (Plot size: )		91 = 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: 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>0</u>	x 2 = <u>0</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>90</u>	x 4 = <u>360</u>
UPL species <u>66</u>	x 5 = <u>330</u>
Column Totals: <u>201</u> (A)	<u>825</u> (B)
Prevalence Index = B/A = <u>4.104</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

AN22 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 <sup>1</sup>	Loc <sup>2</sup>					
0-9	10YR	3/2	100%						Loam		
9-13	2.5Y	5/3	100%						Very Fine Sandy Loam		

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

<sup>2</sup>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 :

☐ 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)

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

Restrictive Layer (if observed):Type: bouldersDepth (inches): 13

Hydric Soil Present?YesNo

Remarks:





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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	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%	
<b>Herb Stratum (Plot size: 5')</b>	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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	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>
<b>Column Totals:</b> <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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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><b>Field Observations:</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Surface Water Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/></p> <p>Water Table Present?    <b>Yes</b> <input type="radio"/>    <b>No</b> <input checked="" type="radio"/></p> <p>Saturation Present? (includes capillary fringe)    <b>Yes</b> <input type="radio"/>    <b>No</b> <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><b>Wetland Hydrology Present?</b>    <b>Yes</b> <input type="radio"/>    <b>No</b> <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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	85 = Total Cover			<b>Prevalence Index worksheet:</b> 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>50</u> x 3 = <u>150</u> FACU species <u>113</u> x 4 = <u>452</u> UPL species <u>3</u> x 5 = <u>15</u> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	40 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	41 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>	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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	43 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	15 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	35 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	2/1	100%					Muck	sapri c	
8-12	10YR	2/1	100%					Very Fine Sandy Loam		

<sup>1</sup> Type:

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

<sup>2</sup> 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 :<sup>3</sup>

☐ 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)

<sup>3</sup>Indicators 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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%	_____
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		<b>60 = Total Cover</b>	
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%	_____
<b>Herb Stratum (Plot size: 5')</b>		<b>25 = Total Cover</b>	
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>Tridentalis 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%	_____
<b>Woody Vine Stratum (Plot size: _____)</b>		<b>22 = Total Cover</b>	
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%	_____
		<b>0 = Total Cover</b>	

**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>
<b>Column Totals:</b> <u>107</u> (A)	<u>415</u> (B)

Prevalence Index = B/A = 3.879

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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]



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 6		
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	<b>Dominance Test worksheet:</b>  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)  <b>Prevalence Index worksheet:</b> <div style="display: flex; justify-content: space-between;"> <span>Total % Cover of:</span> <span>Multiply by:</span> </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">OBL species</td> <td style="width: 10%; text-align: center;">5</td> <td style="width: 10%; text-align: center;">x 1 =</td> <td style="width: 10%; text-align: center;">5</td> <td style="width: 30%;"></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">21</td> <td style="text-align: center;">x 2 =</td> <td style="text-align: center;">42</td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">50</td> <td style="text-align: center;">x 3 =</td> <td style="text-align: center;">150</td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td style="text-align: center;">x 4 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td style="text-align: center;">x 5 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td><b>Column Totals:</b></td> <td style="text-align: center;"><b>76</b></td> <td style="text-align: center;"><b>(A)</b></td> <td style="text-align: center;"><b>197</b></td> <td style="text-align: center;"><b>(B)</b></td> </tr> </table> Prevalence Index = B/A = <u>2.592</u>	OBL species	5	x 1 =	5		FACW species	21	x 2 =	42		FAC species	50	x 3 =	150		FACU species	0	x 4 =	0		UPL species	0	x 5 =	0		<b>Column Totals:</b>	<b>76</b>	<b>(A)</b>	<b>197</b>	<b>(B)</b>
OBL species	5	x 1 =	5																																
FACW species	21	x 2 =	42																																
FAC species	50	x 3 =	150																																
FACU species	0	x 4 =	0																																
UPL species	0	x 5 =	0																																
<b>Column Totals:</b>	<b>76</b>	<b>(A)</b>	<b>197</b>	<b>(B)</b>																															
1. <u>Acer rubrum</u>	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%																																
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	<b>50</b>	<b>= Total Cover</b>																																	
1. <u>Ilex verticillata</u>	3	<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%																																
<b>Herb Stratum (Plot size: 5')</b>	<b>3</b>	<b>= Total Cover</b>																																	
1. <u>Osmunda regalis</u>	5	<input checked="" type="checkbox"/>	21.7%	OBL																															
2. <u>Scirpus cyperinus</u>	10	<input checked="" type="checkbox"/>	43.5%	FACW+																															
3. <u>Osmunda cinnamomea</u>	5	<input checked="" type="checkbox"/>	21.7%	FACW																															
4. <u>Carex Intumescens</u>	3	<input type="checkbox"/>	13.0%	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%																																
<b>Woody Vine Stratum (Plot size: _____)</b>	<b>23</b>	<b>= Total Cover</b>																																	
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%																																
	<b>0</b>	<b>= Total Cover</b>																																	

**Hydrophytic Vegetation Indicators:**  
☐ Rapid Test for Hydrophytic Vegetation  
☒ Dominance Test is > 50%  
☒ Prevalence Index is ≤3.0 <sup>1</sup>  
☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  
  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>	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"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-neutral Test (D5)
<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)	

**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%	
			106	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15' )				Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
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%	
			30	= Total Cover		
Herb Stratum (Plot size: 5' )				Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status
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%	
			105	= Total Cover		
Woody Vine Stratum (Plot size: )				Absolute % Cover	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		
Remarks: (Include photo numbers here or on a separate sheet.)						

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:			
<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation			
<input type="checkbox"/> Dominance Test is > 50%			
<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>			
<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Definitions of 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"/>			

\*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			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
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	

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 :<sup>3</sup>

☐ 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:

Spodosol

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

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

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



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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	<b>Dominance Test worksheet:</b>  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>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15' )</b>		<b>35 = Total Cover</b>			
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>	_____	
<b>Herb Stratum (Plot size: 5' )</b>		<b>20 = Total Cover</b>			
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>	_____	
<b>Woody Vine Stratum (Plot size: _____ )</b>		<b>56 = Total Cover</b>			
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>	_____	
		<b>0 = Total Cover</b>			

**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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	<b>90 = Total Cover</b>			<b>Prevalence Index worksheet:</b> 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>14</u> x 3 = <u>42</u> FACU species <u>143</u> x 4 = <u>572</u> UPL species <u>5</u> x 5 = <u>25</u> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	<b>43 = Total Cover</b>			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	<b>29 = Total Cover</b>			<b>Definitions of Vegetation Strata:</b>  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%		
	<b>0 = Total Cover</b>			<b>Hydrophytic Vegetation Present?</b> 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 <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0-5	10YR	3/2	100%					Loam	
5-16	10YR	4/6	100%					Fine Sandy Loam	

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

<sup>3</sup>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:



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"/>	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.)			

## Hydrology

<b>Wetland Hydrology Indicators:</b> 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 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 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 checked="" 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)	
<b>Field Observations:</b> 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): 1 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: 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	<b>110 = Total Cover</b>			<b>Prevalence Index worksheet:</b>
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)
<b>Herb Stratum (Plot size: 5')</b>	<b>10 = Total Cover</b>			Prevalence Index = B/A = <u>2.382</u>
1. <u>Osmunda cinnamomea</u>	50	<input checked="" type="checkbox"/> 100.0%	FACW	<b>Hydrophytic Vegetation Indicators:</b>
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 <sup>1</sup>
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
6. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	0	<input type="checkbox"/> 0.0%		<b>Definitions of Vegetation Strata:</b>
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.
<b>Woody Vine Stratum (Plot size: _____)</b>	<b>50 = Total Cover</b>			
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%		
	<b>0 = Total Cover</b>			

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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	70 = Total Cover			<b>Prevalence Index worksheet:</b> 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 <b>Column Totals:</b> 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%		
<b>Herb Stratum (Plot size: 5')</b>	25 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata:</b>  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.          <b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	2 = 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]





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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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
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>Betula alleghaniensis</u>	10	<input checked="" type="checkbox"/> 50.0%	FAC
2. <u>Fraxinus pennsylvanica</u>	10	<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%	
20 = Total Cover			
Herb Stratum (Plot size: 5')			
1. <u>Onoclea sensibilis</u>	25	<input checked="" type="checkbox"/> 50.0%	FACW
2. <u>Polygonatum pubescens</u>	25	<input checked="" type="checkbox"/> 50.0%	UPL
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%	
50 = 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: 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>0</u>	x 1 = <u>0</u>
FACW species <u>35</u>	x 2 = <u>70</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>25</u>	x 5 = <u>125</u>
Column Totals: <u>70</u> (A)	<u>225</u> (B)

Prevalence Index = B/A = 3.214

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:

AN30 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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	3/2	100%					Loam		
8-16	2.5Y	5/1	100%					Loamy Sand		

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :<sup>3</sup>

☐ 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: 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.): 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:

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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: 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	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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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			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>Malanthemum canadense</i>	10	<input checked="" type="checkbox"/> 29.4%	FAC-	Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%		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%			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____	
1. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 25.0%	FAC	OBL species	<u>18</u> x <u>1</u> = <u>18</u>
2. <u>Lyonia ligustrina</u>	5	<input type="checkbox"/> 12.5%	FACW	FACW species	<u>88</u> x <u>2</u> = <u>176</u>
3. <u>Spiraea alba</u>	25	<input checked="" type="checkbox"/> 62.5%	FACW+	FAC species	<u>10</u> x <u>3</u> = <u>30</u>
4. _____	0	<input type="checkbox"/> 0.0%		FACU species	<u>15</u> x <u>4</u> = <u>60</u>
5. _____	0	<input type="checkbox"/> 0.0%		UPL species	<u>0</u> x <u>5</u> = <u>0</u>
6. _____	0	<input type="checkbox"/> 0.0%		Column Total s:	<u>131</u> (A) <u>284</u> (B)
7. _____	0	<input type="checkbox"/> 0.0%		Prevalence Index = B/A = <u>2.168</u>	
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1. <u>Scirpus cyperinus</u>	8	<input type="checkbox"/> 8.8%	FACW+	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Onoclea sensibilis</u>	25	<input checked="" type="checkbox"/> 27.5%	FACW	<b>Definitions of Vegetation Strata:</b>	
3. <u>Carex crinita</u>	5	<input type="checkbox"/> 5.5%	OBL	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
4. <u>Carex lurida</u>	5	<input type="checkbox"/> 5.5%	OBL	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
5. <u>Scirpus atrovirens</u>	8	<input type="checkbox"/> 8.8%	OBL	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
6. <u>Solidago canadensis</u>	15	<input type="checkbox"/> 16.5%	FACU	Woody vine - All woody vines greater than 3.28 ft in height.	
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%			
<b>Woody Vine Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input 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%			
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					

\*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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%	_____
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		<b>0 = Total Cover</b>	
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%	_____
<b>Herb Stratum (Plot size: 5')</b>		<b>21 = Total Cover</b>	
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%	_____
<b>Woody Vine Stratum (Plot size: _____)</b>		<b>103 = Total Cover</b>	
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%	_____
		<b>0 = Total Cover</b>	

**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>
<b>Column Totals:</b> <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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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 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	Loc <sup>2</sup>			
0-7	10YR	3/2	100%					Loam	
7-12	10YR	4/3	100%					Sandy Loam	
12-16	2.5Y	5/1	100%					Medium Sand	
16-24	10YR	4/6	100%					Sandy Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :<sup>3</sup>

☐ 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)

<sup>3</sup>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:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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): 2		

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')			
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')			
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: _____)			
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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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
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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	0 = Total Cover		
1. <u>Rhus copallinum</u>	50	<input checked="" type="checkbox"/> 76.9%	NI
2. <u>Pinus strobus</u>	5	<input type="checkbox"/> 7.7%	FACU
3. <u>Prunus serotina</u>	5	<input type="checkbox"/> 7.7%	FACU
4. <u>Acer rubrum</u>	5	<input type="checkbox"/> 7.7%	FAC
5. _____	0	<input type="checkbox"/> 0.0%	
6. _____	0	<input type="checkbox"/> 0.0%	
7. _____	0	<input type="checkbox"/> 0.0%	
<b>Herb Stratum (Plot size: 5')</b>	65 = Total Cover		
1. <u>Pteridium aquilinum</u>	20	<input type="checkbox"/> 17.2%	FACU
2. <u>Rubus idaeus</u>	10	<input type="checkbox"/> 8.6%	FAC-
3. <u>Rubus allegheniensis</u>	10	<input type="checkbox"/> 8.6%	FACU-
4. <u>Solidago canadensis</u>	33	<input checked="" type="checkbox"/> 28.4%	FACU
5. <u>Phalaris arundinacea</u>	33	<input checked="" type="checkbox"/> 28.4%	FACW+
6. <u>Carex crinita</u>	10	<input type="checkbox"/> 8.6%	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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	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		

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 3 (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>10</u>	x 1 = <u>10</u>
FACW species <u>33</u>	x 2 = <u>66</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>73</u>	x 4 = <u>292</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>131</u> (A)	<u>413</u> (B)
Prevalence Index = B/A = <u>3.153</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: AN32 upland

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

Depth (inches)	Matrix		Redox Features				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0-8	10YR	3/3	100%					Loam	
8-13	10YR	4/3	100%					Sandy Loam	

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 : <sup>3</sup>

☐ 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):\_\_\_\_\_

Remarks:

Hydric Soil Present?

Yes☐

No☒

Footnote 1

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

Footnote 2

Location: PL=Pore Lining. M=Matrix

Footnote 3

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



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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 <sup>1</sup>	Loc <sup>2</sup>				
0-14	10YR	3/2	100%						Loam	
14-20	2.5Y	5/2	90%	2.5Y	5/1	10%	D	M	Sand	

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

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

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

Restrictive Layer (if observed):

Type:  
Depth (inches):

Hydric Soil Present?

YesNo

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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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>				<b>Prevalence Index worksheet:</b> 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>3</u> x 3 = <u>9</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>75</u> x 5 = <u>375</u> Column Totals: <u>168</u> (A) <u>724</u> (B)  Prevalence Index = B/A = <u>4.310</u>
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%	_____	
Herb Stratum (Plot size: 5') <div>60 = Total Cover</div>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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%	_____	
Woody Vine Stratum (Plot size: _____) <div>78 = Total Cover</div>				<b>Definitions of Vegetation Strata:</b>  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>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

<b>Wetland Hydrology Indicators:</b> 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 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 checked="" 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)	
<b>Field Observations:</b> 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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		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%	
<b>Herb Stratum (Plot size: 5')</b>		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%	
<b>Woody Vine Stratum (Plot size: _____)</b>		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 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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: 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%	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	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%	
<b>Herb Stratum (Plot size: 5')</b>	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%	
<b>Woody Vine Stratum (Plot size: _____)</b>	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>
<b>Column Totals:</b> <u>146</u> (A)	<u>559</u> (B)

Prevalence Index = B/A = 3.829

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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:   an35 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 <sup>1</sup>	Loc <sup>2</sup>				
0-6	10YR	3/2	100%					Loam		
6-11	10YR	4/6	100%					Fine Sandy Loam		
11-16	10YR	4/4	100%					Fine Sandy Loam		

<sup>1</sup>Type:

C=Concentration.

D=Depletion.

RM=Reduced Matrix,

CS=Covered or Coated Sand Grains

<sup>2</sup>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 :<sup>3</sup>

☐ 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)

<sup>3</sup>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:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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):		<b>Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/></b>
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	20 = Total Cover			<b>Prevalence Index worksheet:</b>
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>
<b>Herb Stratum (Plot size: 5')</b>				<b>Hydrophytic Vegetation Indicators:</b>
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 <sup>1</sup>
4. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> 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%		<b>Definitions of Vegetation Strata:</b>
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.
<b>Woody Vine Stratum (Plot size: _____)</b>	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: an36 wetland

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

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-22	10YR	2/1	100%				Peat	
22+	2.5Y	5/1	100%				Gravelly Sand	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

☐ 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)

<sup>3</sup>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:

# 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

<b>Wetland Hydrology Indicators:</b> 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"/> 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)	
<b>Field Observations:</b> 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: 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	45 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	26 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	15 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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)
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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	20 = Total Cover			<b>Prevalence Index worksheet:</b>
1. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 28.6%	FAC	Total % Cover of: <u>3</u> Multiply by: <u>3</u>
2. <u>Betula alleghaniensis</u>	20	<input checked="" type="checkbox"/> 57.1%	FAC	OBL species <u>3</u> x 1 = <u>3</u>
3. <u>Vaccinium corymbosum</u>	5	<input type="checkbox"/> 14.3%	FACW-	FACW species <u>10</u> x 2 = <u>20</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>50</u> x 3 = <u>150</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>63</u> (A) <u>173</u> (B)
	35 = Total Cover			Prevalence Index = B/A = <u>2.746</u>
<b>Herb Stratum (Plot size: 5')</b>				<b>Hydrophytic Vegetation Indicators:</b>
1. <u>Osmunda cinnamomea</u>	5	<input checked="" type="checkbox"/> 62.5%	FACW	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
2. <u>Carex lurida</u>	3	<input checked="" type="checkbox"/> 37.5%	OBL	<input checked="" type="checkbox"/> Dominance Test is > 50%
3. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
4. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> 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%		
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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	8 = Total Cover			<b>Definitions of Vegetation Strata:</b>
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.
2. _____	0	<input type="checkbox"/> 0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..
3. _____	0	<input type="checkbox"/> 0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
4. _____	0	<input type="checkbox"/> 0.0%		Woody vine - All woody vines greater than 3.28 ft in height.
	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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> 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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	83 = Total Cover			<b>Prevalence Index worksheet:</b> 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 <b>Column Totals:</b> 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%		
<b>Herb Stratum (Plot size: 5')</b>	40 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata:</b>  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>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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	15 = Total Cover			<b>Hydrophytic Vegetation Present?</b> 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:

an37 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 <sup>1</sup>	Loc <sup>2</sup>				
0-8	10YR	3/2	100%					Loam		
8-16	10YR	4/4	100%					Sandy Loam		
16+									Bedrock	

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

<sup>2</sup>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 :**

☐ 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)

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

**Restrictive Layer (if observed):**

Type:  
  Bedrock

Depth (inches): 16

Hydric Soil Present?

Yes☐

No☒

Remarks:



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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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
1. <u>Acer rubrum</u>	20	<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%	
20 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <u>Ilex verticillata</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%	
50 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Rel.Strat. Cover	Indicator Status
1. <u>Osmunda cinnamomea</u>	10	<input checked="" type="checkbox"/> 35.7%	FACW
2. <u>Iris versicolor</u>	3	<input type="checkbox"/> 10.7%	OBL
3. <u>Coptis trifolia</u>	15	<input checked="" type="checkbox"/> 53.6%	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%	
28 = 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>3</u>	x 1 = <u>3</u>
FACW species <u>75</u>	x 2 = <u>150</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>98</u> (A)	<u>213</u> (B)
Prevalence Index = B/A = <u>2.173</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 <sup>1</sup>

☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of 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: 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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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)	

<b>Field Observations:</b>			
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):		
		<b>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></b>	

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%		
Sapling/Shrub Stratum (Plot size: 15')		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>
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%		
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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
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]





AN38 Wetland



AN38 Upland





AN38 Wetland



AN38 Wetland

# 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: 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:         

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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
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)	
<b>Field Observations:</b>			
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: 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%	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	60 = Total Cover			<b>Prevalence Index worksheet:</b> 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 <b>Column Totals:</b> 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%	_____	
<b>Herb Stratum (Plot size: 5')</b>	25 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%	_____	
<b>Woody Vine Stratum (Plot size: _____)</b>	74 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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 <sup>1</sup>	Loc <sup>2</sup>					
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

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains   <sup>2</sup>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 :<sup>3</sup>

☐ 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)

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

Restrictive Layer (if observed):

Type: Bouldery

Depth (inches): 15

Hydric Soil Present?

Yes☐

No☒

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

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<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%		
<b>Sapling/Shrub Stratum (Plot size: 15')</b>	43 = Total Cover			<b>Prevalence Index worksheet:</b> 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> <b>Column Totals:</b> <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%		
<b>Herb Stratum (Plot size: 5')</b>	18 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> 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%		
<b>Woody Vine Stratum (Plot size: _____)</b>	50 = Total Cover			<b>Definitions of Vegetation Strata:</b>  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			<b>Hydrophytic Vegetation Present?</b> 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