FISHER ASSOCIATES

Memo

Date: June 4, 2018

To: Ball Hill Wind Energy, LLC
11101 West 120th Avenue, Suite 400
Broomfield, CO 80021

Project: Ball Hill Wind Project
Chautauqua County, New York

Re: Ball Hill Wind Project- Supplemental Wetland Delineation
Turbines 2, 4 and 8

On behalf of Ball Hill Wind Energy, LLC, Fisher Associates' environmental scientist, Nicole Dutcher, conducted a supplemental field delineation on May 23, 2018 to identify jurisdictional Waters of the U.S. (WOTUS) including wetlands and streams within the additional Project Study Limits (PSL) defined in support of the Ball Hill Wind Project ("Project"). This is a supplemental delineation to the Wetland Delineation Report dated July 2016, revised May 2017, and a supplemental report from January 2018.

Due to turbine shifts associated with Turbines 2, 4, and 8, four additional areas were field reviewed for wetlands and streams. These additional areas are depicted in the revised Wetland Delineation Mapping attached to this memorandum (see Attachment A, Sheets 85, 86, 94 and 99).

The additional PSL were delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), and the 1995 New York State Freshwater Wetlands Delineation Manual. Wetlands were identified based on the presence of hydric soils, a vegetative community dominated by hydrophytes, and inundated or saturated conditions and/or indicators of hydrologic patterns. A project-specific identification number was given to delineated wetlands. Wetland delineation data relative to vegetation, hydrology, soils and general observations were documented on routine wetland data forms consistent with the guidance of the 2012 Regional Supplement. Wetland field data points were established within close proximity to the wetland boundary in order to document upland and wetland conditions existing along the wetland boundary. Photographs were taken of the field data stations to document conditions along the delineation boundary.

Turbine 2 Additional Area:
No wetlands or streams were observed within the Turbine 2 additional PSL (Attachment A, Sheet 99). The uplands within this additional PSL are comprised of row crops. Photo Point C was taken depicting the conditions of the area (see Attachment C).

Turbine 4 Additional Area:
There were two additional areas reviewed in association with the Turbine 4 shift and the subsequent shifting of the connection between Turbine 4 and Turbine 5 (Attachment A, Sheets 85 and 86). No wetlands or streams were identified within the Turbine 4 additional PSL for both areas. Photo Point A was taken to depict the conditions of the open hay field within the Turbine 4 area. Additionally, Data Point 815 was

taken in the other area (between Turbine 4 and Turbine 5) to determine whether the area is a wetland or upland, since the boundary to Wetland A523 is just beyond the PSL to the northeast. No wetland parameters were identified at Data Point 815 (see Attachment B for Wetland Determination Data Sheet).

Turbine 8 Additional Area:
An additional area was reviewed to the south of the turbine due to the shift in the turbine location (Attachment A, Sheet 94). A small palustrine emergent (PEM) wetland, Wetland A653, was identified within the additional PSL. The total acreage of Wetland A653 located within the limits of disturbance (LOD) for the proposed Project is 0.013 acres. This wetland is located to the southeast of an upland, wooded area, and continues to the south outside of the PSL (see Attachment B for Wetland Determination Data Sheets). Photo Point B was taken to depict the upland conditions of the wooded area in the northeastern portion of the additional PSL.

If you have any questions please contact me via email (ndutcher@fisherassoc.com) or phone at 585-334-1310.

Sincerely,

FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C.

Nicole Dutcher
Environmental Scientist, WPIT

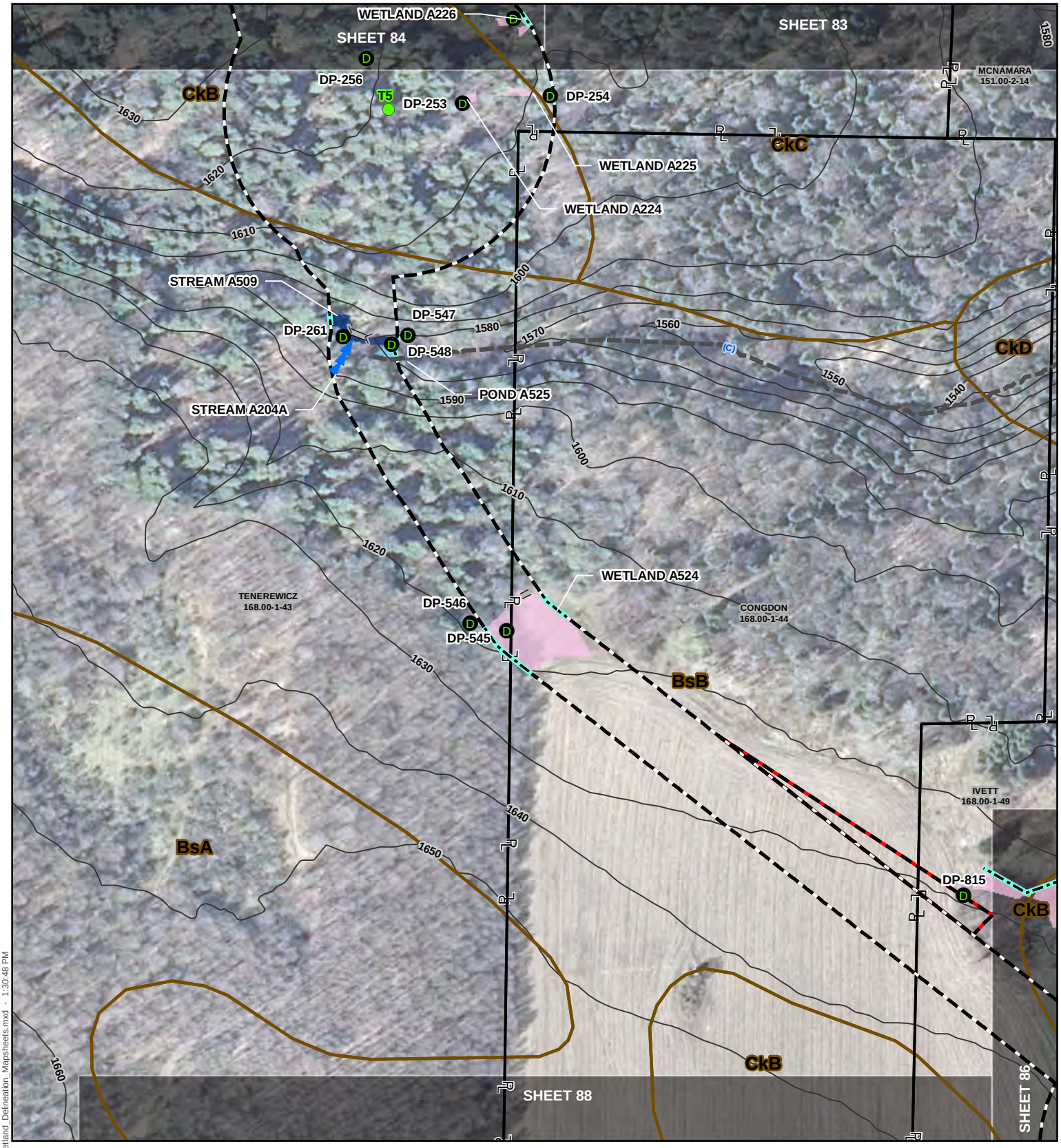
Enclosures: Attachment A: Figure 2: Wetland Delineation Revised Sheets 85-86, 94 & 99

Attachment B: Wetland Determination Data Forms

Attachment C: Photographic Log

Attachment A

Figure 2: Wetland Delineation Revised Sheets



Data Point
Proposed Turbine
Culvert
Delineation Continuation Line
Delineated Jurisdictional Ditch
Delineated Ephemeral Stream
Delineated Intermittent Stream
Delineated Perennial Stream

NYSDEC Stream (Standard)
Contours (10ft)
Delineated Intermittent Stream
Delineated Perennial Stream
Delineated Pond
Delineated PEM Wetland
Delineated PFO Wetland
Delineated PSS Wetland

NWI Wetland
NYSDEC Freshwater Wetland
NYSDEC Wetland 100ft Buffer
Soil Complex Boundary
Parcel
Project Study Limits
Additional Project Study Limits
Matchline

Photo Location

0 100 200 Feet

Author: AK | Aerial Date: 3/21/2012 | Revision Date: 5/25/2018

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BALL HILL WIND PROJECT
WETLAND DELINEATION REPORT
SHEET 85 OF 108

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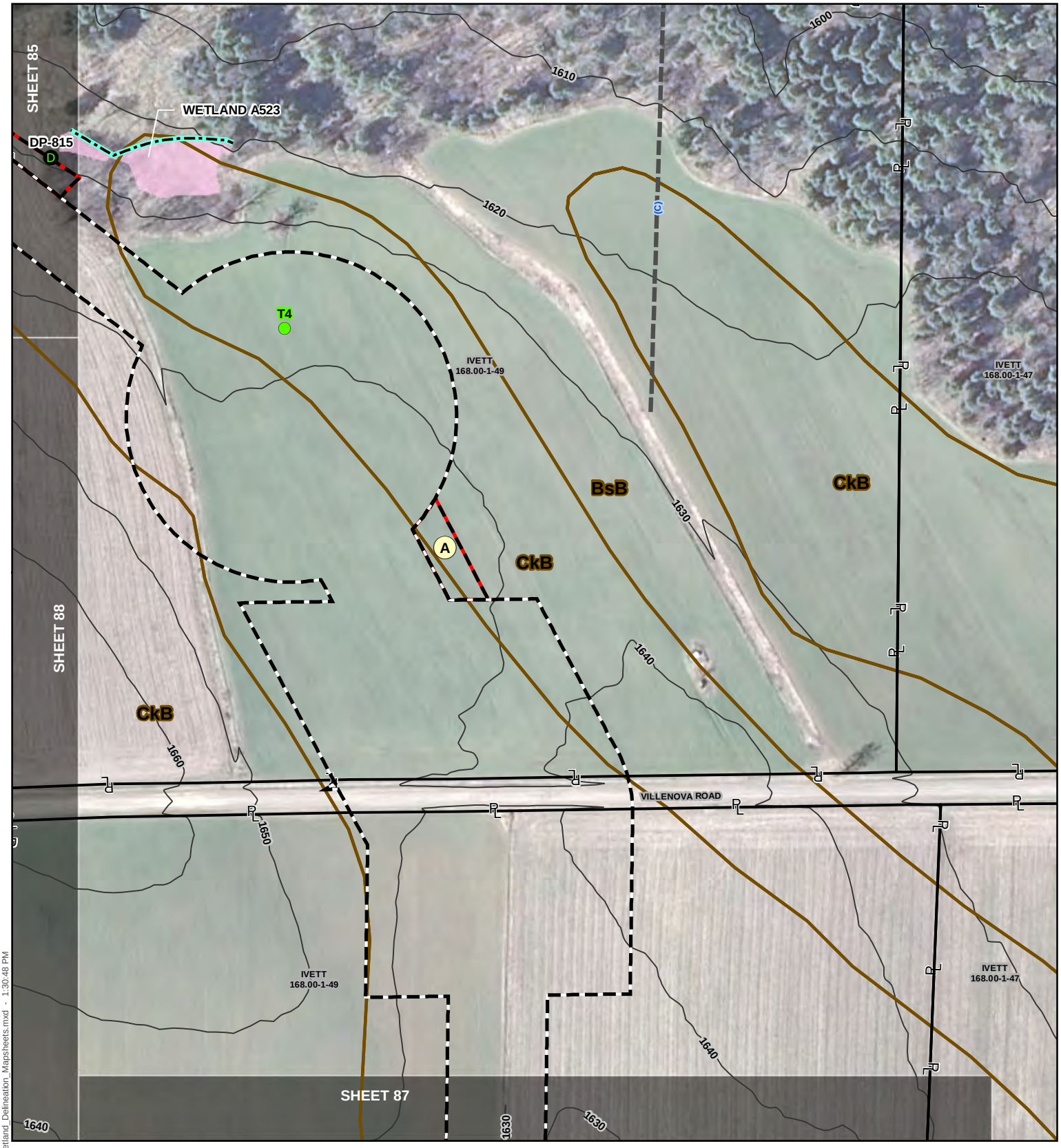

D Data Point	NYSDEC Stream (Standard)	NWI Wetland	Photo Location
Proposed Turbine	Contours (10ft)	NYSDEC Freshwater Wetland	
Culvert	Delineated Intermittent Stream	NYSDEC Wetland 100ft Buffer	
Delineation Continuation Line	Delineated Perennial Stream	Soil Complex Boundary	
Delineated Jurisdictional Ditch	Delineated Pond	Parcel	
Delineated Ephemeral Stream	Delineated PEM Wetland	Project Study Limits	
Delineated Intermittent Stream	Delineated PFO Wetland	Additional Project Study Limits	
Delineated Perennial Stream	Delineated PSS Wetland	Matchline	

Author: AK | Aerial Date: 3/21/2012 | Revision Date: 5/25/2018

0 100 200 Feet

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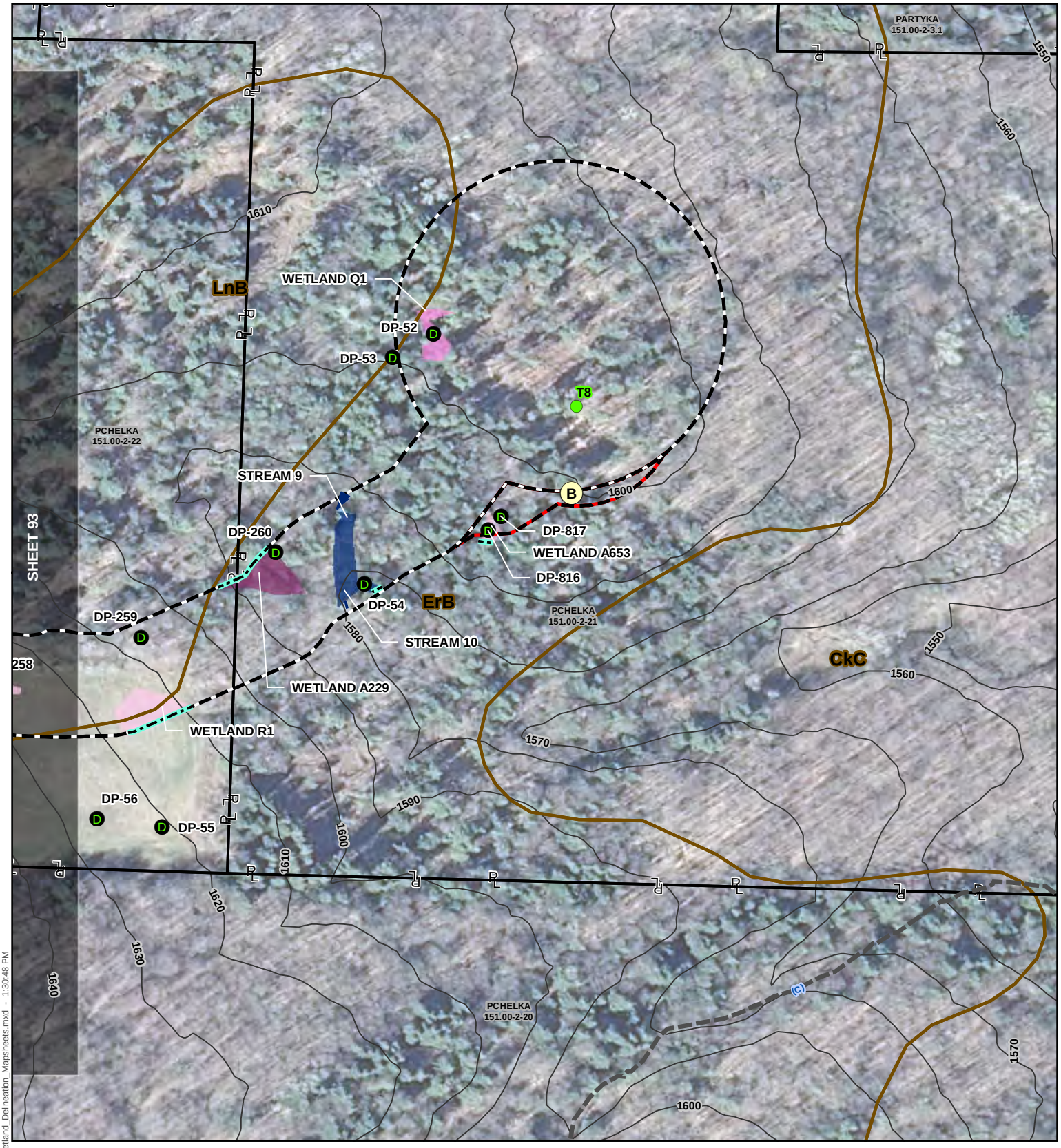

Data Point
Proposed Turbine
Culvert
Delineation Continuation Line
Delineated Jurisdictional Ditch
Delineated Ephemeral Stream
Delineated Intermittent Stream
Delineated Perennial Stream

NYSDEC Stream (Standard)
Contours (10ft)
Delineated Intermittent Stream
Delineated Perennial Stream
Delineated Pond
Delineated PEM Wetland
Delineated PFO Wetland
Delineated PSS Wetland

NWI Wetland
NYSDEC Freshwater Wetland
NYSDEC Wetland 100ft Buffer
Soil Complex Boundary
Parcel
Project Study Limits
Additional Project Study Limits
Matchline

Photo Location

0 100 200 Feet

Author: AK | Aerial Date: 3/21/2012 | Revision Date: 5/25/2018

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SHEET 94 OF 108

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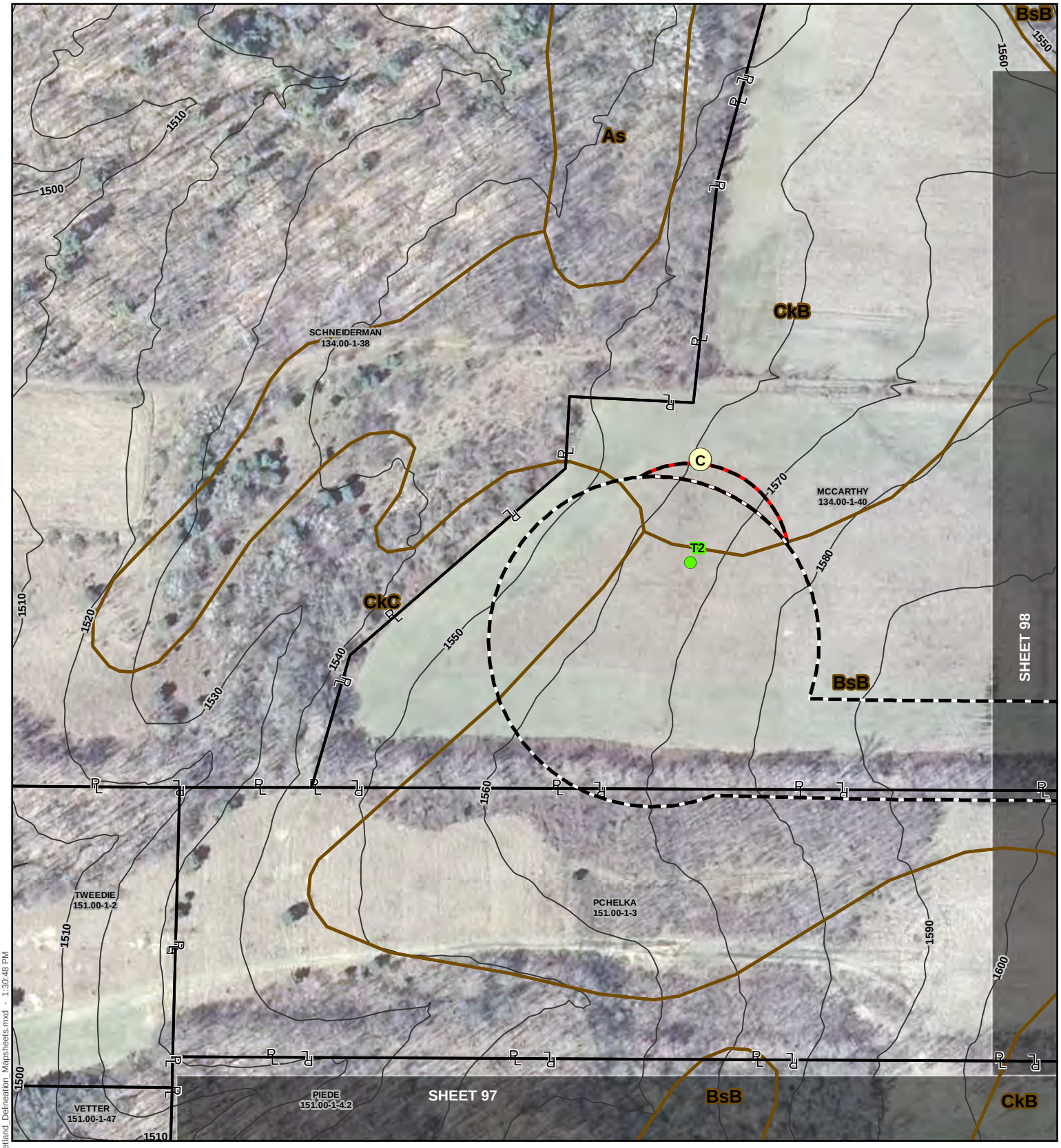

Data Point
Proposed Turbine
Culvert
Delineation Continuation Line
Delineated Jurisdictional Ditch
Delineated Ephemeral Stream
Delineated Intermittent Stream
Delineated Perennial Stream

NYSDEC Stream (Standard)
Contours (10ft)
Delineated Intermittent Stream
Delineated Perennial Stream
Delineated Pond
Delineated PEM Wetland
Delineated PFO Wetland
Delineated PSS Wetland

NWI Wetland
NYSDEC Freshwater Wetland
NYSDEC Wetland 100ft Buffer
Soil Complex Boundary
Parcel
Project Study Limits
Additional Project Study Limits
Matchline

Photo Location

0 100 200 Feet

Author: AK | Aerial Date: 3/21/2012 | Revision Date: 5/25/2018

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BALL HILL WIND PROJECT
WETLAND DELINEATION REPORT
SHEET 99 OF 108

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Attachment B

Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ball Hill Wind Project City/County: Chautauqua County Sampling Date: 5/23/18

Applicant/Owner: Ball Hill Wind Energy, LLC State: NY Sampling Point: DP- 815

Investigator(s): Nicole Dutcher Section, Township, Range: Town

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10%

Subregion (LRR or MLRA): LRR-R Lat: 42.386209 Long: -79.142322 Datum: NAD 83

Soil Map Unit Name: BsB- Busti silt loam, 8 to 15 percent slopes NWI classification: Not Mapped

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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

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

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

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

Upland data point at connection btwn T4 and T5 at edge of hay field.

PEM wetland to the NE.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): –
Water Table Present?	Yes ____	No X	Depth (inches): –
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): –

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

No wetland hydrology observed.

VEGETATION – Use scientific names of plants.

Sampling Point: DP-815

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer Saccharum	20	Y	FACU
2. Prunus Serotina	30	Y	FACU
3. Acer Saccharinum	25	Y	FACW
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15'R)			
1. Lonicera Tatarica	25	Y	FACU
2. Acer Saccharum	5	N	FACU
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5'R)			
1. Rubus idaeus	20	Y	FACU
2. Fragaria virginiana	10	N	FACU
3. Aychium minus	15	Y	FACU
4. Boehmeria Cylindrica	5	N	OBL
5. Symphyotrichum prenanthoides	15	Y	FAC
6. Solidago rugosa	18	Y	FAC
7. Galium boreale	5	N	FAC
8. Daucus Carota	2	N	UPL
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
	Ø	= 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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL

Sampling Point: DP-SLS

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					SiL	
13-20	10YR 3/3	98	7.5YR 3/4	2	C	M	SiL	faint

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

No hydric soils observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ball Hill Wind Project City/County: Chautauqua County Sampling Date: 5/23/18

Applicant/Owner: Ball Hill Wind Energy, LLC State: NY Sampling Point: DP-B6

Investigator(s): Nicole Dutcher Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1-3?

Subregion (LRR or MLRA): LRR-R Lat: 42.400847 Long: -79.155185 Datum: NAD 83

Soil Map Unit Name: ErB- Erie silt loam, 3 to 8 percent slopes NWI classification: Not Mapped

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: Wetland A053

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

Small PEM wetland in mixed Elm + hemlock woods. No trees noted w/in wetland. Wetland appears to be isolated

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1"
Water Table Present?	Yes X	No ____	Depth (inches): 6"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP-816

Tree Stratum (Plot size: 15'R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'R)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5'R)			
1. Onoclea sensibilis	10	N	FACW
2. Trillium undulatum	5	N	FACU
3. Fraxinus pennsylvanica	20	Y	FACW
4. Impatiens capensis	30	Y	FACW
5. Glyceria acutiflora	10	N	OBL
6. Parathelypteris noveboracensis	5	N	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 15'R)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

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

Vegetation radius sizes adjusted to fit w/in wetland boundary. PEM located in woods w/ no trees noted w/in wetland.

SOIL

Sampling Point: DP- B16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100%					Muck	
6-8	10YR 5/4	60%	10YR 3/1	40%	D	M	L	
8-12	10YR 5/4	80	10YR 6/8	20	C	M	L	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): —

Hydric Soil Present? Yes _____ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ball Hill Wind Project City/County: Chautauqua County Sampling Date: 5/23/18

Applicant/Owner: Ball Hill Wind Energy, LLC State: NY Sampling Point: DP-817

Investigator(s): Nicole Dutcher Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Convex Slope (%): 5?

Subregion (LRR or MLRA): LRR-R Lat: 42.400905 Long: -79.155114 Datum: NAD 83

Soil Map Unit Name: ErB- Erie silt loam, 3 to 8 percent slopes NWI classification: Not Mapped

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 X No	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID:

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

Upland data point for Wetland AUS3 in additional study area for Turbine 8 located in mix Elm + Hemlock forest.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): —
Water Table Present?	Yes ____	No X	Depth (inches): —
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): —

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

No wetland hydrology observed.

VEGETATION – Use scientific names of plants. Sampling Point: DP-817

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga Canadensis	30	Y	FACU
2. Ulmus americana	15	Y	FACW
3. Acer saccharum	15	Y	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15'R)			
1. Fraxinus pennsylvanica	15	Y	FACW
2. Ulmus americana	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5'R)			
1. Fraxinus pennsylvanica	20	Y	FACW
2. Tsuga Canadensis	5	N	FACU
3. Rubus idaeus	10	N	FACU
4. Parathelypteris noveboracensis	13	Y	FAC
5. Ulmus americana	10	N	FACW
6. Fragaria virginiana	2	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
	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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.432 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: DP-817

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
+2-0	2.5YR 2.5/3	100?					Duff	
0-1	10YR 3/2	100?					Si L	
1-20	10YR 6/6	60%	10YR 6/3	30	D	M	Si L	
			7.5YR 3/2	10	D	M		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): —

Hydric Soil Present? Yes ____ No X

Remarks:

No hydric soils observed.

Attachment C

Photographic Log

FISHER ASSOCIATES

PHOTOGRAPHIC RECORD

Project Name:	**Site Location:**	**Project No.**
Ball Hill Wind Project Supplemental Photo Log- June 2018	Chautauqua County, NY	150001

Photo No. 1

Facing North

Description:

Data Point 815
Upland Data Point
adjacent to Wetland
A523 at Turbine 4.

Photo No. 2

Facing South

Description:

Data Point 815
Overview of Uplands
adjacent to Wetland
A523 at Turbine 4.

FISHER ASSOCIATES

PHOTOGRAPHIC RECORD

Project Name:	**Site Location:**	**Project No.**
Ball Hill Wind Project Supplemental Photo Log- June 2018	Chautauqua County, NY	150001

Photo No. 3

Facing North

Description:

Data Point 816
PEM Data Point for Wetland A653 at Turbine 8.

Photo No. 4

Facing South

Description:

Data Point 816
Overview of PEM Wetland A653 at Turbine 8.

FISHER ASSOCIATES

PHOTOGRAPHIC RECORD

Project Name:	**Site Location:**	**Project No.**
Ball Hill Wind Project Supplemental Photo Log- June 2018	Chautauqua County, NY	150001

Photo No. 5

Facing North

Description:

Data Point 817
Upland Data Point for Wetland A653 at Turbine 8.

Photo No. 6

Facing South

Description:

Data Point 817
Overview of Uplands adjacent to Wetland A653 at Turbine 8.

FISHER ASSOCIATES

PHOTOGRAPHIC RECORD

Project Name:	**Site Location:**	**Project No.**
Ball Hill Wind Project Supplemental Photo Log- June 2018	Chautauqua County, NY	150001

Photo No. 7

Facing East

Description:

Photo Point A
Overview of hay field where Turbine 4 is located. Field is dominated by dandelion, alfalfa, clover, and Timothy's grass.

Photo No. 8

Facing West

Description:

Photo Point B
Overview of northeastern portion of additional area that is uplands within the woods at Turbine 8.

FISHER ASSOCIATES

PHOTOGRAPHIC RECORD

Project Name:	**Site Location:**	**Project No.**
Ball Hill Wind Project Supplemental Photo Log- June 2018	Chautauqua County, NY	150001

Photo No. 9

Facing Southwest

Description:

Photo Point C
Overview of open row crop field at Turbine 2.