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June 27, 2019

Ms. Tanowa Troupe, Secretary Ohio Power Siting Board Docketing Division 180 East Broad Street, 11th Floor Columbus, OH 43215

Re: Case Nos. 09-479-EL-BGN, 11-3446-EL-BGA, 16-469-EL-BGA, and 16-2404-EL-BGA

In the Matter of the Application of Hardin Wind Energy LLC for a Certificate of Environmental Compatibility and Public Need for the Hardin Wind Farm.

Phase 3 – Compliance with Condition 57(a), Case No. 09-479-EL-BGN – 2019 Wetlands Delineation Report (Laydown Areas)

Dear Ms. Troupe:

Hardin Wind Energy LLC ("Applicant") is certified to construct a wind-powered electric generation facility in Hardin County, Ohio, in accordance with the orders issued by the Ohio Power Siting Board ("OPSB") in the above-referenced cases.

The Applicant is currently preparing to begin Phase 3 of the project, which will entail construction of the access roads and turbine foundations that were not included in Phases 1 and 2.

At this time, for purposes of complying with the certificate conditions for Phase 3, the Applicant is filing the attached Addendum 2 to the 2019 Wetlands Delineation Report ("Addendum 2"). Addendum 2, together with the 2018 and 2019 Wetlands Delineation Reports filed with the OPSB on June 20, 2019, ensures that all final turbine locations, laydown areas, access roads, and turning radii required for the project have been screened for the presence of wetlands and other waters. This document is being provided in compliance with Condition 57(a) of OPSB's March 22, 2010 Order in Case No. 09-479-EL-BGN.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

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WETLANDS AND OTHER WATERS OF THE U.S. DELINEATION REPORT

ADDENDUM 2

Hardin Wind Energy Project
Hardin County, Ohio
June 2019

TRC Project No. 339845.0000.0000



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- 2. USDA Soil Survey Map
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*Refer to August 2018 Wetland and Other Waters of the US Delineation Report for photos of streams HW-M1 and HW-M7.

- C. USACE Wetland Determination Data Forms
- D. Ohio EPA ORAM Data Forms
- E. Ohio EPA Stream Data Forms



ACRONYMS

August 2018 Hardin Wind Energy Project Wetlands and Other Waters of the August 2018 Report

U.S. Delineation Report

May 2019 Hardin Wind Energy Project Wetlands and Other Waters of the U.S. Addendum 1

Delineation Report Addendum 1

FEMA Federal Emergency Management Agency

GPS Global Positioning System

HHEI Headwater Habitat Evaluation Index

HUC Hydrologic Unit Code

HWE Hardin Wind Energy LLC

NHD National Hydrography Dataset

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory

OAC Ohio Administrative Code

ODNR Ohio Department of Natural Resources

Ohio EPA Ohio Environmental Protection Agency

OHWM Ordinary High-Water Mark

ORAM Ohio Rapid Assessment Method

PEM Palustrine emergent

PFO Palustrine forested

PHWH Primary Headwater Habitat

Project Hardin Wind Energy Project

PSS Palustrine scrub-shrub



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POW Palustrine open-water

QHEI Qualitative Habitat Evaluation Index

TNM The National Map

TRC Environmental Corporation

U.S. United States

USACE United States Army Corps of Engineers

USDA United States Department of Agriculture

USEPA United States Environmental Protection Agency

USFWS United States Fish and Wildlife Service

USGS United States Geological Survey

WWH Warmwater Habitat



1.0 Introduction

On behalf of Hardin Wind Energy LLC (HWE), TRC Environmental Corporation (TRC) has prepared this Addendum 2 to the August 2018 Hardin Wind Energy Project Wetlands and Other Waters of the U.S. Delineation Report (August 2018 Report) (TRC Environmental Corporation 2018), for the Hardin Wind Energy Project (Project), located in Hardin County, Ohio (Appendix A, Figure 1). At the request of HWE, TRC conducted a wetlands and other waters of the U.S. survey for modifications to construction access roads, and inclusion of roadway intersection turning radii assessments and laydown yards associated with the proposed Project. This Addendum contains the methodology and results of additional wetland and other waters of the U.S. identification and delineation investigations performed by TRC. Combined with the August 2018 Report (TRC Environmental Corporation 2018) and May 2019 Hardin Wind Energy Project Wetlands and Other Waters of the U.S. Delineation Report Addendum 1 (Addendum 1) (TRC Environmental Corporation 2019), Addendum 2 ensures that all final turbine locations, laydown areas, access roads, and turning radii required for the Project have been screened for presence of wetlands and other waters of the US. Mr. Matthew Ray (TRC), Ms. Sarah Bender (TRC), and Mr. Tom Radford (TRC), environmental scientists with over 15 years of combined experience, were the lead field scientists and authors of this Addendum.

The primary objective of the survey was to identify and evaluate wetlands and other waters of the U.S. within the June 2019 Hardin Wind Addendum 2 Study Area, such that the resources could be considered in the planning, design, permitting, and installation of the proposed Project in accordance with Ohio Administrative Code (OAC) Chapter 4906-4-08 (B)(1)(a)(iv-v)-(b).

For this Addendum, TRC surveyed an additional 147 acres (59 hectares) on June 19th and 20th, 2019. In total, the combined August 2018 Hardin Wind Study Area, May 2019 Hardin Wind Addendum Study Area, and June 2019 Hardin Wind Addendum 2 Study Area for the Project is approximately 1,377 acres (557 hectares), including areas of Marion, Cessna, Lynn, McDonald, and Roundhead Townships, in Hardin County, Ohio, where sixty (60) proposed turbines, collection lines and access roads may be located (Appendix A, Figure 1). The June 2019 Hardin Wind Addendum 2 Study Area includes no buffer for laydown yards and a 60-foot buffer (30 feet on either side of centerline) for turbine access roads and turning radii located within the boundary of this survey.



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The Project lies within the Eastern Corn Belt Plains, which typically have loamy and well-drained soils, and most commonly characterized by its rolling plains and local end moraines (Wilken, Jiménez Nava, & Griffith, 2011). The vegetation of the ecoregion was originally dominated by American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), and American basswood (*Tilia americana*) forests. Overall the landscape has been significantly altered to accommodate agricultural activities which have negatively altered stream chemistry and turbidity (US EPA 2010; US EPA 2013; Wilken, Jiménez Nava and Griffith 2011). Topography in the region consists of flat farmland, with elevations ranging from 958 feet (292 meters) to 1030 feet (314 meters) above mean sea level. The proposed Project is located within the Ohio River and Lake Erie drainage basins. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) maintains a classification system for identifying watersheds by hydrologic unit code (HUC). The Project is located mostly within the Upper Scioto River watershed (8-Digit HUC: 05060001) with a small portion, located northeast of SR-309, within the Blanchard River watershed (8-Digit HUC: 04100008) (USDA/NRCS, 2013).



2.0 METHODOLOGY

Pursuant to the United States Army Corps of Engineers (USACE) wetlands and other waters of the U.S. delineation methodology, potential wetland and other waters of the U.S. located within the June 2019 Hardin Wind Addendum 2 Study Area were identified, delineated, and mapped through the combined use of existing available public source information and field investigation. In addition, in accordance with the State of Ohio's Water Quality Standards (OAC Rule 3745-1-54), wetlands within the June 2019 Hardin Wind Addendum 2 Study Area were evaluated and provisionally categorized utilizing Ohio EPA's Ohio Rapid Assessment Method (ORAM).

2.1 Desktop Review Methodology

The sources utilized for June 2019 desktop review included the following: the United States Geological Survey (USGS) Alger, Foraker, and Roundhead, Ohio (1988) 7.5-minute series topographical quadrangles (USGS 1994) (Appendix A, Figure 1); soil datasets acquired from the NRCS Web Soil Survey (USDA (b) 2019) for Hardin County, Ohio (Appendix A, Figure 2 [Pages 1 through 6]); the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Map (NWI) near Alger, Ohio (USFWS 2019) and the USGS National Hydrography Dataset (NHD) (USGS 2017) (Appendix A, Figure 3); the Federal Emergency Management Agency (FEMA) flood hazard risk map (FEMA 2019) (Appendix A, Figure 4) and the Ohio EPA OAC Chapter 3745-1 Water Quality Standards (Ohio EPA 2017). Sources were reviewed to identify conditions that may be present within the June 2019 Hardin Wind Addendum 2 Study Area. The results of the desktop review were used to aid in the June 2019 field investigation.

2.2 Field Methodology-Wetlands

Wetland resources within the June 2019 Hardin Wind Addendum 2 Study Area were identified and their boundaries determined in accordance with the USACE Wetlands Delineation Manual (1987 Manual) (USACE 1987), utilizing the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Midwest (Version 2.0) (Regional Supplement) (USACE 2010). Consistent with the 1987 Manual, wetland determinations were based on dominant plant species, soil characteristics, and hydrologic characteristics. In addition, wetlands and other waters of the U.S. were evaluated in accordance with the State of Ohio's Water Quality Standards (OAC Chapter 3745-1) as managed by the Ohio Environmental Protection Agency (Ohio EPA). Areas that exhibit hydric soils, wetland hydrology, and a dominance of hydrophytic vegetation were considered potentially jurisdictional wetlands. Wetlands or other waters of the U.S. are considered potentially jurisdictional until verified by the USACE



(USACE/USEPA 2008). A photographic log of field observations is presented in Appendix B and completed USACE Wetland Determination Data Forms-Midwest Region are presented in Appendix C.

Wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats for the United States (Cowardin, et al. 1979). Wetland classifications were based upon hydrophytic vegetation type and dominance found within the delineated wetland, and included the following classification types: palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), palustrine open-water (POW), or a combination of these classifications (Cowardin, et al. 1979).

The wetland boundaries were flagged and surveyed through the use of a Global Positioning System (GPS) receiver capable of sub-meter accuracy (Model R1, handheld, Trimble, Sunnyvale, California). The delineated wetlands were labeled (e.g.W-MRR-1, W-MRR-2, W-MRR-3, etc.), and correspond to the wetlands illustrated on the Delineated Resource map provided in Appendix A, as Figure 5 (Pages 1 through 8). The wetland boundaries were mapped as polygons and the wetland areal extents were calculated using the shapefile properties utility in ArcMap.

2.3 Ohio Rapid Assessment Method

The regulation of wetlands under Section 401 and 404 of the Clean Water Act requires the assessment of the function and quality of wetlands in order to determine the appropriate level of mitigation that should be required for the destruction, alteration, or degradation of a wetland. In accordance with Ohio EPA requirements (OAC Rule 3745-1-54), delineated wetlands within the June 2019 Hardin Wind Addendum 2 Study Area were evaluated using the Ohio Rapid Assessment Method (ORAM) in an attempt to determine the ecological quality and the level of function of these wetlands (ORAM Version 5.0) (Mack 2001). The wetland value information, as determined by the ORAM, is provided to the Ohio EPA for the purposes of placing wetlands in the appropriate wetland Antidegradation Category as defined in Ohio's Wetland Antidegradation Rule (OAC Rule 3745-1-54). The scoring sheets (ORAM Version 5.0 Field Form Quantitative Rating) for individual wetlands were completed and were the basis for the provisional wetland categorizations. ORAM scores are considered preliminary until verified by the Ohio EPA. Delineated wetlands are illustrated in Appendix A, Figure 5 (Pages 1 through 8). Completed ORAM data forms are included in Appendix D.



2.4 Field Methodology - Other Waters of the U.S.

The June 2019 Hardin Wind Addendum 2 Study Area was screened for the presence of areas that meet the criteria for "other waters of the U.S." specified in the *1987 Manual*. Other waters of the U.S. consist of ephemeral, intermittent, and perennial streams, as well as open water features, such as ponds. Drainage channels that exhibited defined "bed and bank" and an ordinary high-water mark (OHWM) in the channel were identified and delineated as jurisdictional streams. Drainage channels that do not exhibit an OHWM and/or defined bed and bank were regarded as non-jurisdictional drainages. Non-jurisdictional drainages were not delineated as part of the study.

Identified streams were evaluated utilizing Ohio EPA approved methods for stream habitat assessment which include the Qualitative Habitat Evaluation Index (QHEI) and/or the Headwater Habitat Evaluation Index (HHEI) assessment method (Ohio EPA 2006, Ohio EPA 2012). These approved assessment methods provide an empirical, quantified evaluation of streams as required by the State of Ohio for permitting and mitigation purposes. These methods assess stream habitat to provide a qualitative index (score) to determine the level of compensatory mitigation that may be needed for impacts to waters of the U.S.

Use of the QHEI or HHEI assessment method is determined based on the size of the stream's drainage area and/or the stream's pool depths. Where coverage was available, the drainage area was calculated using automated basin characteristics from USGS StreamStats v 4.0: Ohio (USGS 2017).

Following Ohio EPA guidance, streams with a drainage area of greater than 1.0 square mile (2.6 square kilometers), or which have pools with maximum depths over 15.8 inches (40.0 centimeters), as determined by measuring pool depth within the stream, were evaluated using the QHEI. Data on these streams were collected on the QHEI form provided by the Ohio EPA. The QHEI is composed of six principal metrics: substrate, instream cover, channel morphology, riparian zone and bank erosion, pool/glide and riffle-run quality, and map gradient. Each metric is scored separately and summed to obtain the total QHEI score. Using the scoring methods associated with these forms, the stream is placed into the following general narrative ranges, dependent on stream size; for smaller streams (\leq 20 sq. mi): Excellent >70, Good 55-69, Fair 43-54, Poor 30-42, and Very Poor <30; for larger streams (\geq 20 sq. mi): Excellent >75, Good 60-74, Fair 45-59, Poor 30-44, and Very Poor <30.

The HHEI was utilized to score streams with a drainage area of less than 1.0 square mile (2.6 square kilometers). Data on these streams were collected on the HHEI forms, provided by the Ohio EPA.



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Observational data regarding the physical nature of the stream corridor including stream flow, riparian zone land use and buffer width, and channel modification were recorded. Measurements included bankfull width, maximum pool depth and substrate composition.

Using the scoring method associated with these forms, a Class I, II, or III was assigned to each stream (with Class I being the least protected and Class III being the most protected). Streams that exhibited a major change in morphology were scored at multiple representative locations. QHEI and HHEI scores are considered preliminary until verified by the Ohio EPA.

The June 2019 Hardin Wind Addendum 2 Study Area was investigated for other waters of the U.S. that are considered "open water" by the USACE. By definition, open water was "an area that, during a year with normal patterns of precipitation, has standing or flowing water for sufficient duration to establish an OHWM, where aquatic vegetation is either non-emergent, spares or absent" (USACE n.d.). When identified, the derived open water (pond) boundaries were surveyed through the use of a GPS receiver capable of sub-meter accuracy (model GeoHX handheld, Trimble, Sunnyvale, California). Delineated open waters are labeled (e.g., WB-HW-M1, WB-HW-M2 etc.) and areas area mapped as polygons.



3.0 RESULTS

Five (5) wetlands, W-MRR-1, W-MRR-2, W-MRR-3, W-MRR-4, and W-MRR-5; one (1) stream, S-MRR-2; and one (1) freshwater pond, WB-MRR-1, were identified and delineated within the June 2019 Hardin Wind Addendum 2 Study Area (Tables 3.1, 3.2.1, 3.2.2). Additionally, two (2) streams, HW-M1 and HW-M7, previously identified from the August 2018 field investigation were extended to include their reach within the June 2019 Hardin Wind Addendum 2 Study Area during the field investigation.

Table 3.1 Potential Wetlands and Other Waters of the U.S. Investigated and Jurisdictional Determinations within the June 2019 Hardin Wind Addendum 2 Study Area

Resource ID	Field Survey Date	Location (Latitude, Longitude)	Provisional Determination ¹	Acreage (Hectares) of Jurisdictional Waters ¹ in Study Area and Cowardin Classification ²
W-MRR-1	6/19/19	40.70983, -83.74916	Waters of the U.S., Wetland	0.01 (0.004) PEM
W-MRR-2	6/19/19	40.69928, -83.72057	Waters of the U.S., Wetland	0.16 (0.065) PEM
W-MRR-3	6/19/19	40.70358, -83.74453	Waters of the U.S., Wetland	0.01 (0.004) PEM
W-MRR-4	6/20/19	40.63745, -83.78126	Waters of the U.S., Wetland	0.16 (0.065) PEM
W-MRR-5	6/20/20	40.63585, -83.76518	Waters of the U.S., Wetland	0.27 (0.11) PEM
S-MRR-2	6/19/19	40.6744, -83.7534	Waters of the U.S., Stream	< 0.01 (< 0.004) R5
HW-M1 (Cooney Ditch)	5/10/18	40.69978, -83.78465	Waters of the U.S., Stream	< 0.01 (< 0.004) R5
HW-M7	5/14/18	40.6745, -83.8419	Waters of the U.S., Stream	< 0.01 (< 0.004) R5
WB-MRR-1	6/19/19	40.69928, -83.72057	Waters of the U.S., Pond	0.50 (0.20) PUB

¹ Preliminarily assigned. Not considered final until verified by the USACE



² Cowardin Classification

PEM = Palustrine Emergent

PSS = Palustrine Scrub/Shrub

PFO = Palustrine Forested

PUB = Palustrine Unconsolidated Bottom

R5 = Perennial Stream

3.1 Background Resources

3.1.1 USGS Topographic Map

Based on the desktop review, the June 2019 Hardin Wind Addendum 2 Study Area contained no wetland features according to the Alger, Foraker, and Roundhead, Ohio (1985) 7.5-minute series topographical quadrangles (USGS 1994) (Appendix A, Figure 1).

3.1.2 Soils

According to the soil dataset acquired from the NRCS Web Soil Survey for Hardin County, Ohio, the June 2019 Hardin Wind Addendum 2 Study Area at wetland W-MRR-1, W-MRR-2, W-MRR-3, W-MRR-4, and W-MRR-5 is underlain by one (1) soil type: Pewamo silty clay loam, 0-1% slopes (PkA). The Pewamo silty clay loam, 0-1% percent slopes soil type is listed as a hydric soil in Hardin County, Ohio (USDA (a) 2019) (Appendix A, Figure 2 [Pages 1 through 6]). As detailed in the August 2018 Report (TRC Environmental Corporation 2018), the August 2018 Hardin Wind Study Area for the Project is underlain by twenty-five (25) different soil types; thirteen (13) soils are mapped as non-hydric and twelve (12) soils are mapped as hydric (USDA (a) 2019).

3.1.3 National Wetland Inventory

According to the USFWS NWI (USFWS 2019), one (1) freshwater pond is located within the June 2019 Hardin Wind Addendum 2 Study Area. (Appendix A, Figure 3).

3.1.4 National Hydrography Dataset

According to the USGS NHD (USGS 2017) Downloadable Data Collection from The National Map (TNM), there are mapped streams identified within the June 2019 Hardin Wind Addendum 2 Study Area (Appendix A, Figure 3).

3.1.5 FEMA Flood Hazard

According to the FEMA Flood Hazard mapping, a portion of the June 2019 Hardin Wind Addendum 2 Study Area is located within FEMA Flood Zone A (FEMA 2019) (Appendix A, Figure 4).

3.1.6 Water Quality Standards

One (1) stream, HW-M1, within the June 2019 Hardin Wind Addendum 2 Study Area has a Designated Use from Ohio EPA according to OAC Chapter 3745-1 Water Quality Standards (Ohio EPA 2017). Cooney Ditch (HW-M1) is listed as Warmwater Habitat (WWH). This designation is based on the results of a



biological field assessment performed by the Ohio EPA. According to the OAC Chapter 3745-1 Water Quality Standards, WWH are capable of supporting and maintaining a balanced community of warmwater aquatic organisms.

3.2 Field Delineations

TRC performed this wetland and other waters of the U.S. identification and delineation on June 19th and 20th, 2019 during the normal growing season. Weather conditions on June 19th were warm, reaching a high of 86 degrees Fahrenheit (30 degrees Celsius), with some heavy rain observed in the evening. On June 20th it was overcast and cool, reaching a high of 72 degrees Fahrenheit (22 degrees Celsius) with intermittent light to steady rain. The presence of apparent hydrology and hydric soil indicators, as well as identifiable plant species within the wetland area, allowed for positive wetland determinations. The USACE maintains the final authority that determines jurisdiction; therefore, statements about jurisdiction within this Report are preliminary and subject to final determination by the USACE and Ohio EPA.

3.2.1 Wetlands

During the course of the June 2019 investigation, five (5) wetlands, W-MRR-1, W-MRR-2, W-MRR-3, W-MRR-4, W-MRR-5, were identified and delineated within the June 2019 Hardin Wind Addendum 2 Study Area. The wetlands identified are listed in Table 3.2.1, described below and shown in Appendix A, Figure 5. The completed USACE Wetland Determination Data Forms-Midwest Region are presented in Appendix C and Ohio EPA ORAM Data Forms are presented in Appendix D.

Table 3.2.1 Wetlands Delineated within the June 2019 Hardin Wind Addendum 2 Study Area

Wetland ID	Vegetation Class ¹	Extends Offsite?	Acres (Hectares) ²	ORAM Score ³	ORAM Category ³	Jurisdictional Status ⁴
W-MRR-1	PEM	No	0.01 (0.004)	20	Category 1	Jurisdictional
W-MRR-2	PEM	No	0.16 (0.065)	46	Category 2	Jurisdictional
W-MRR-3	PEM	Yes	0.01 (0.004)	24.5	Category 1	Jurisdictional
W-MRR-4	PEM	Yes	0.16 (0.065)	52	Category 2	Jurisdictional
W-MRR-5	PEM	Yes	0.27 (0.11)	31.5	Category 2	Jurisdictional

¹ PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested



² Represents delineated acreage within June 2019 Hardin Wind Addendum 2 Study Area

³ Preliminarily assigned. Not considered final until verified by Ohio EPA

⁴ Preliminarily assigned. Not considered final until verified by the USACE

Wetland W-MRR-1

Wetland W-MRR-1 (Appendix A, Figure 5 [Page 1 of 8]) is a 0.01-acre (0.004 hectare) PEM wetland dominated by rough-leaved dogwood (*Cornus drummondi*), reed canary grass (*Phalaris arundinacea*) and crested sedge (*Carex cristatella*). This area abuts a previously farmed area; however, the abutting field is fallow. The wetland is preliminary assigned an ORAM score of 20, corresponding to a Category 1 wetland (low quality). The score was limited by disturbances to the hydrology, substrate, and habitat of Wetland W-MRR-1 (i.e. stormwater input, and farming).

Wetland W-MRR-2

Wetland W-MRR-2 (Appendix A, Figure 5 [Page 2 of 8]) is a 0.16-acre (0.065 hectare) PEM wetland, with areas of scrub-shrub and tree vegetation, dominated by pin oak (*Quercus palustris*), eastern cottonwood (*Populus deltoides*), sandbar willow (*Salix interior*), narrow-leaf cattail (*Typha angustifolia*), and hybrid cattail (*Typha x glauca*). Wetland W-MRR-2 is associated with and located along the fringe of an artificial pond (WB-MRR-1); WB-MRR-1 is described below in Section 3.2.2 Other Waters of the U.S. The wetland is preliminary assigned an ORAM score of 46, corresponding to a Category 2 wetland (moderate quality). The score was limited by disturbances to the hydrology, substrate, and habitat of Wetland W-MRR-2 (i.e. tiling, mowing, clearcutting, and farming).

Wetland W-MRR-3

Wetland W-MRR-3 (Appendix A, Figure 5 [Page 3 of 8]) is a 0.01-acre (0.004 hectare) PEM wetland dominated by eastern cottonwood (*Populus deltoides*), rough-leaved dogwood (*Cornus drummondi*) and reed canary grass (*Phalaris arundinacea*). This depressional wetland extends west outside the June 2019 Hardin Wind Addendum 2 Study Area and is connected to a larger PSS wetland. The wetland complex abuts an adjacent stream that is also located outside the June 2019 Hardin Wind Addendum 2 Study Area. The wetland is preliminary assigned an ORAM score of 24.5, corresponding to a Category 1 wetland (low quality). The score was limited by disturbances to the hydrology, substrate, and habitat of Wetland W-MRR-3 (i.e. tiling, nutrient enrichment and farming).

Wetland W-MRR-4

Wetland W-MRR-4 (Appendix A, Figure 5 [Page 4 of 8]) is a 0.16-acre (0.065 hectare) PEM wetland dominated by swamp white oak (*Quercus bicolor*), rough-leaved dogwood (*Cornus drummondi*) and hop sedge (*Carex lupilina*). Wetland W-MRR-4 extends outside the June 2019 Hardin Wind Addendum 2 Study Area and is connected to a large second growth forested wetland complex west of County Road 130.



The wetland is preliminary assigned an ORAM score of 52, corresponding to a Category 2 wetland (moderate quality).

Wetland W-MRR-5

Wetland W-MRR-5 (Appendix A, Figure 5 [Page 5 of 8]) is a 0.27-acre (0.11 hectare) PEM wetland dominated by water plantain (*Alisma plantago-aquatica*), water pepper (*Persicaria hydropiper*) and blunt spikerush (*Eleocharis obtusa*). This area has been actively farmed; however, excess rain has caused saturation and the field to be left fallow. The wetland is preliminary assigned an ORAM score of 31.5, corresponding to a Category 2 wetland (moderate quality). The score was limited by disturbances to the hydrology, substrate, and habitat of Wetland W-MRR-5 (i.e. tiling, nutrient enrichment and farming).

3.2.2 Other Waters of the U.S.

A. Streams

One (1) new stream, S-MRR-2, was delineated during the June 2019 field investigation. Additionally, two (2) streams, HW-M1 and HW-M7, from the August 2018 field investigation were extended during the June 2019 field investigation; HW-M1(Cooney Ditch) and HW-M7.

Streams identified within the June 2019 Hardin Wind Addendum 2 Study Area are all located within the Upper Scioto River watershed (8-Digit HUC: 05060001) (USDA/NRCS 2013). The streams are listed in Table 3.2.2, described below and shown in Appendix A, Figure 5. Table 3.2.2, below provides flow regime, drainage area, preliminary HHEI and QHEI scores, and HHEI class and QHEI ratings for streams identified in the Study Area. Completed Ohio EPA stream assessment data forms are provided in Appendix E. All jurisdiction determinations are preliminary until the USACE makes the final determination.

Table 3.2.2 Other Waters of the U.S. Delineated within the June 2019 Hardin Wind Addendum 2 Study Area

Stream/Waterbody ID ¹	Flow Regime	Length ² (ft; m)	Drainage Area (sq mi; sq km) ³	QHEI (Q)/HHEI (H) Score ⁴	HHEI Class/ QHEI Rating
S-MRR-2	Perennial	73.4 (22.4)	2.81 (7.27)	26 (Q)	Very Poor
HW-M1 (Cooney Ditch)	Perennial	54.5 (16.6)	0.30 (0.77)	22 (Q)	WWH
HW-M7	Perennial	26.4 (8.0)	2.53 (6.55)	30 (Q)	WWH

Preliminary assigned. Not considered final until verified by the USACE

⁴ Qualitative Habitat Evaluation Index (QHEI), for larger streams with greater than 1.0 square mile.



² Represents delineated length, in feet, and meters within Study Area

Where within coverage, drainage area was calculated using automated basin characteristics from USGS StreamStats v 4.0: Ohio (USGS 2018).

Hardin Wind Energy Project Wetlands and Other Waters of the U.S. Delineation Report Addendum 2 June 2019

Confidential Business Information

S-MRR-2

Stream S-MRR-2 (Appendix A; Figure 5 [Page 6 of 8]) is a perennial stream with a drainage area of approximately 2.81 square miles (7.27 square kilometers). The stream flows south to north through the June 2019 Hardin Wind Addendum 2 Study Area for approximately 73.4 feet (22.4 meters). S-MRR-2 drains to Scioto River, and as such, is preliminarily determined to be a jurisdictional water of the U.S. Based on the QHEI habitat assessment method, dominant substrates are comprised of silt; instream cover (i.e. overhanging vegetation, shallows in slow water, and aquatic macrophytes) is nearly absent; channel sinuosity is low, development is poor, channelization is recovering, stability is moderate; bank erosion is none/little; riparian width is non-existent; floodplain quality is row crop; maximum pool depth is less than 24 inches (0.62 meter); and bank full width is approximately 30 feet (9.1meters). Stream S-MRR-2 does not have an Ohio EPA designated use. This stream has been preliminarily assigned a QHEI score of 26; therefore, categorized as in the Very Poor QHEI narrative range.

HW-M1 (Cooney Ditch)

Stream HW-M1 (Cooney Ditch) (Appendix A; Figure 5 [Page 7 of 8]) is a perennial stream with a drainage area of approximately 0.3 square miles (0.48 square kilometers). The stream flows west to east through the June 2019 Hardin Wind Addendum 2 Study Area for approximately 54.5 feet (16.6 meters). Stream HW-M1 (Cooney Ditch) drains to Scioto River, and as such, is preliminarily determined to be a jurisdictional water of the U.S. Based on the QHEI habitat assessment method, dominant substrates are comprised of silt and gravel; riparian width is narrow; floodplain quality is row crop; maximum pool depth is less than 16 inches (0.40 meter); and bank full width is approximately 30 feet (9.1 meters). Cooney Ditch (Stream HW-M1) has an Ohio EPA designated use of WWH. This stream has been preliminarily assigned a QHEI score of 22; therefore, categorized as in the Very Poor QHEI narrative range.

HW-M7

Stream HW-M7 (Appendix A; Figure 5 [Page 8 of 8]) is a perennial stream with a drainage area of approximately 2.53 square miles (6.55 square kilometers). The stream flows west to east through the June 2019 Hardin Wind Addendum 2 Study Area for approximately 26.4 feet (8.0 meters) HW-M7 drains to Scioto River, and as such, is preliminarily determined to be a jurisdictional water of the U.S. Based on the QHEI habitat assessment method, dominant substrates are comprised of silt; instream cover (i.e. overhanging vegetation, shallows in slow water, and aquatic macrophytes) is nearly absent; channel sinuosity is low, development is poor, channelization is recovery, stability is moderate; bank erosion is none/little; riparian width is non-existent; floodplain quality is row crop and urban/industrial; maximum



pool depth is less than 47.28 inches (1.2 meter); and bank full width is approximately 30 feet (9.1 meters). Stream HW-M7 does not have an Ohio EPA designated use of WWH. This stream has been preliminarily assigned a QHEI score of 30; therefore, categorized as in the Very Poor QHEI narrative range.

B. Waterbody (Ponds)

One (1) waterbody was delineated within the June 2019 Hardin Wind Addendum 2 Study Area. Waterbody WB-MRR-1 is a pond with wetland fringe (W-MRR-2, see above) surrounding it. The waterbody is listed in Table 3.2.2, described below and shown in Appendix A, Figure 5 (Page 2 of 8).

Table 3.2.3 Waterbodies Delineated within the June 2019 Hardin Wind Addendum 2 Study Area

Waterbody ID ¹	Acres (Hectares)
WB-MRR-1	0.50 (0.20)
¹ Preliminary assigned. Not considered fit	nal until verified by the USACE

WB-MRR-1

Waterbody WB-MRR-1 (Appendix A; Figure 5 [Page 2 of 8]) is a palustrine unconsolidated bottom freshwater pond with drain tile and stormwater input. As described above in Section 3.2.1 Wetlands, W-MRR-2 is located along the perimeter of WB-MRR-1. The pond is located in the June 2019 Hardin Wind Addendum 2 Study Area for approximately 0.50 acre (0.20 hectare). WB-MRR-1 abuts jurisdictional waters and is hydrologically connected to the Scioto River, and as such, is preliminarily determined to be a jurisdictional water of the U.S.



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Hardin Wind Energy Project Wetlands and Other Waters of the U.S. Delineation Report Addendum 2 June 2019

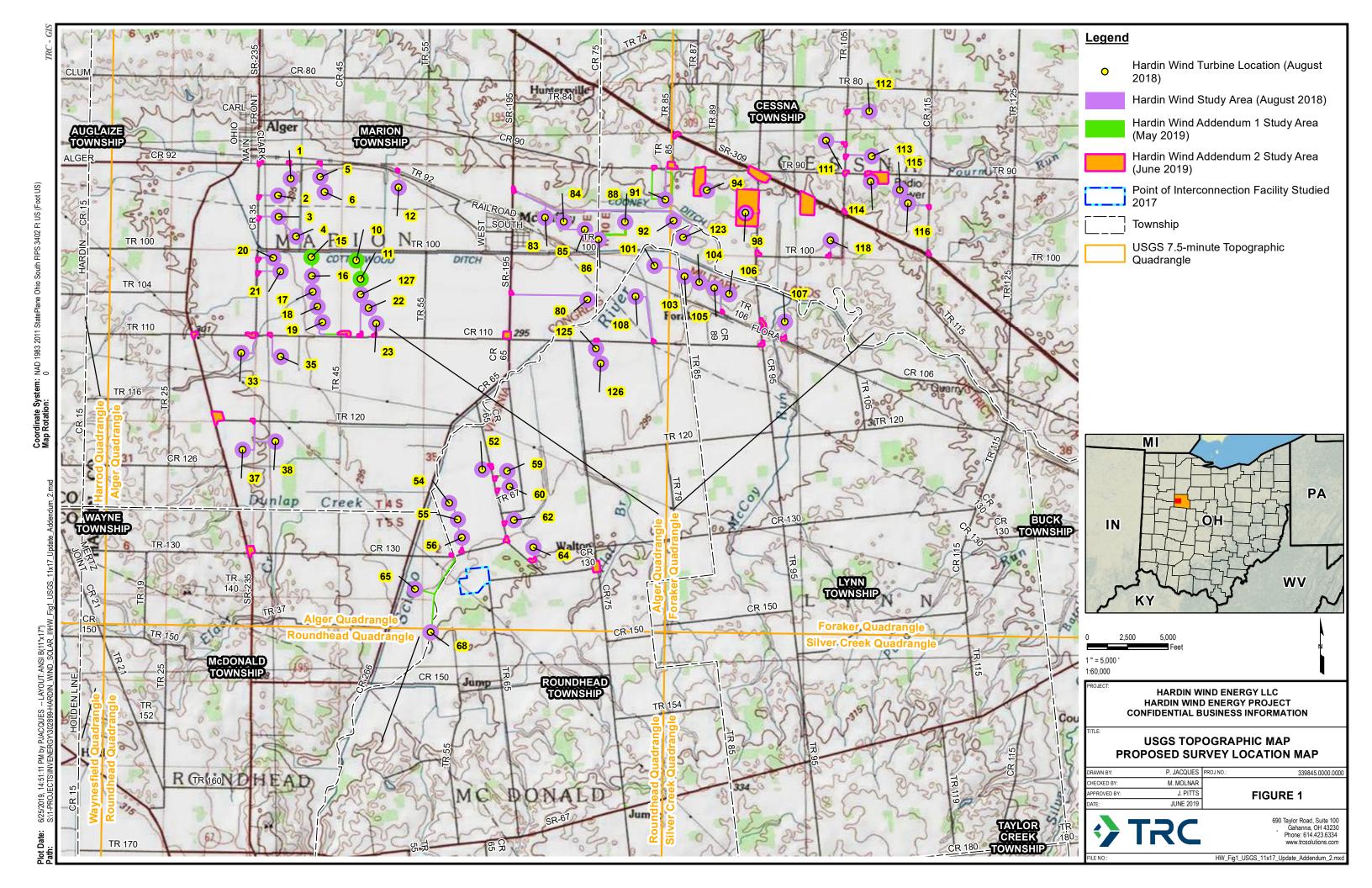
Confidential Business Information

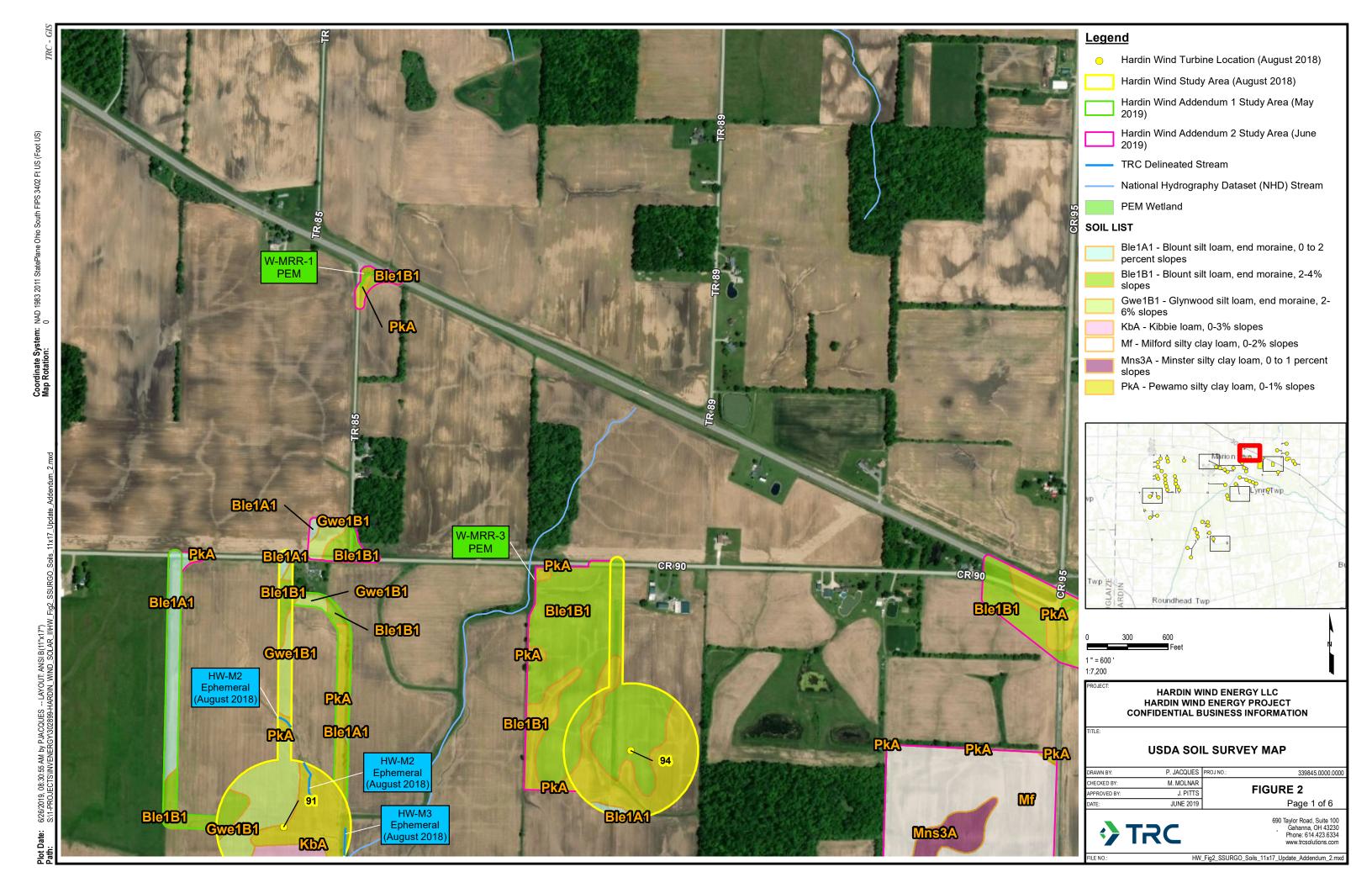
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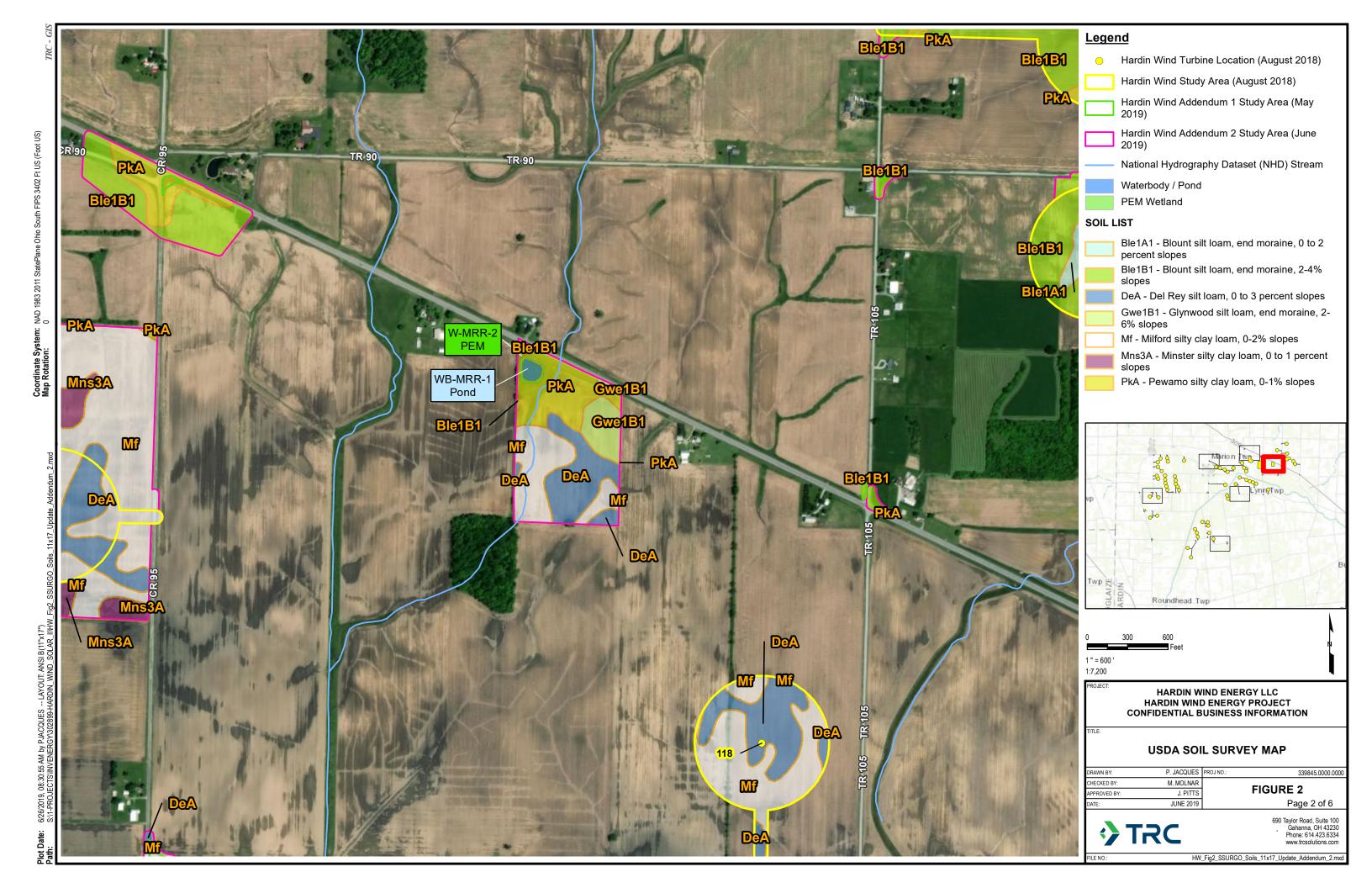
Wilken, Ed, Francisco Jiménez Nava, and Glenn Griffith. 2011. *North American Terrestrial Ecoregions Level III*. Commission for Environmental Cooperation, Canada. http://www.cec.org/Atlas/Files/Terrestrial_Ecoregions_L1/TerrestrialEcoregions_L1_GeoPDF.zip.

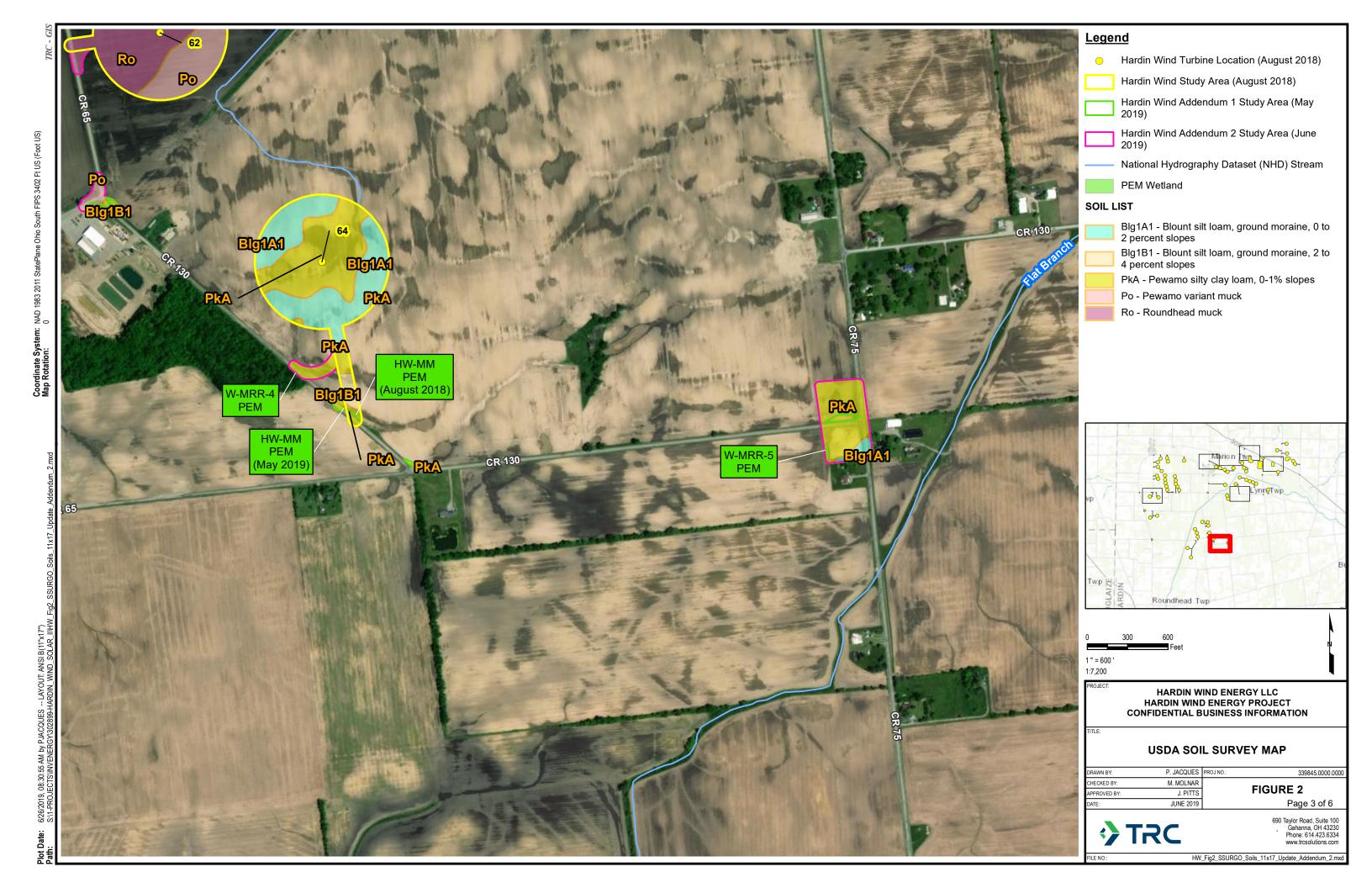


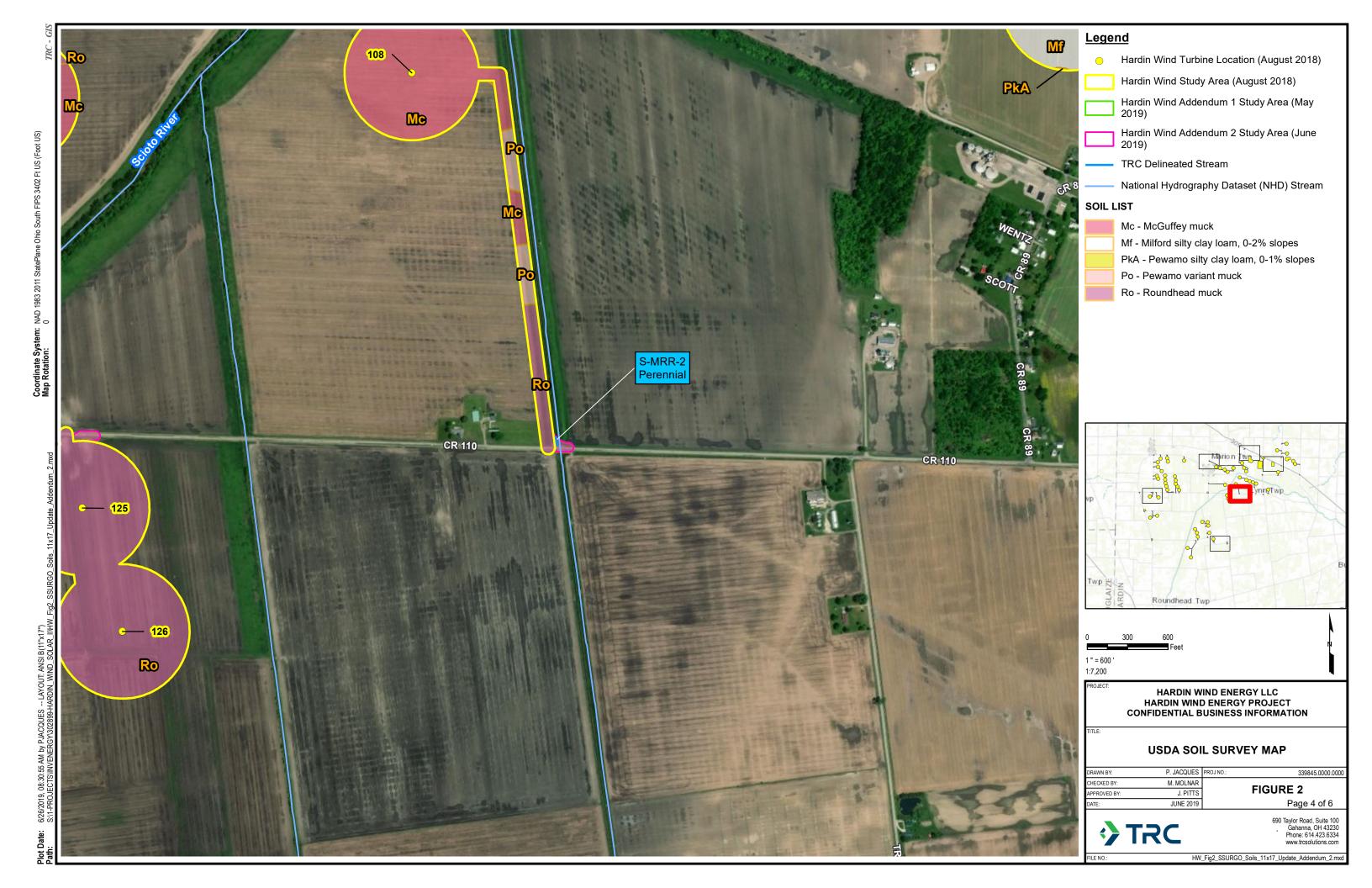
Appendix A Figures

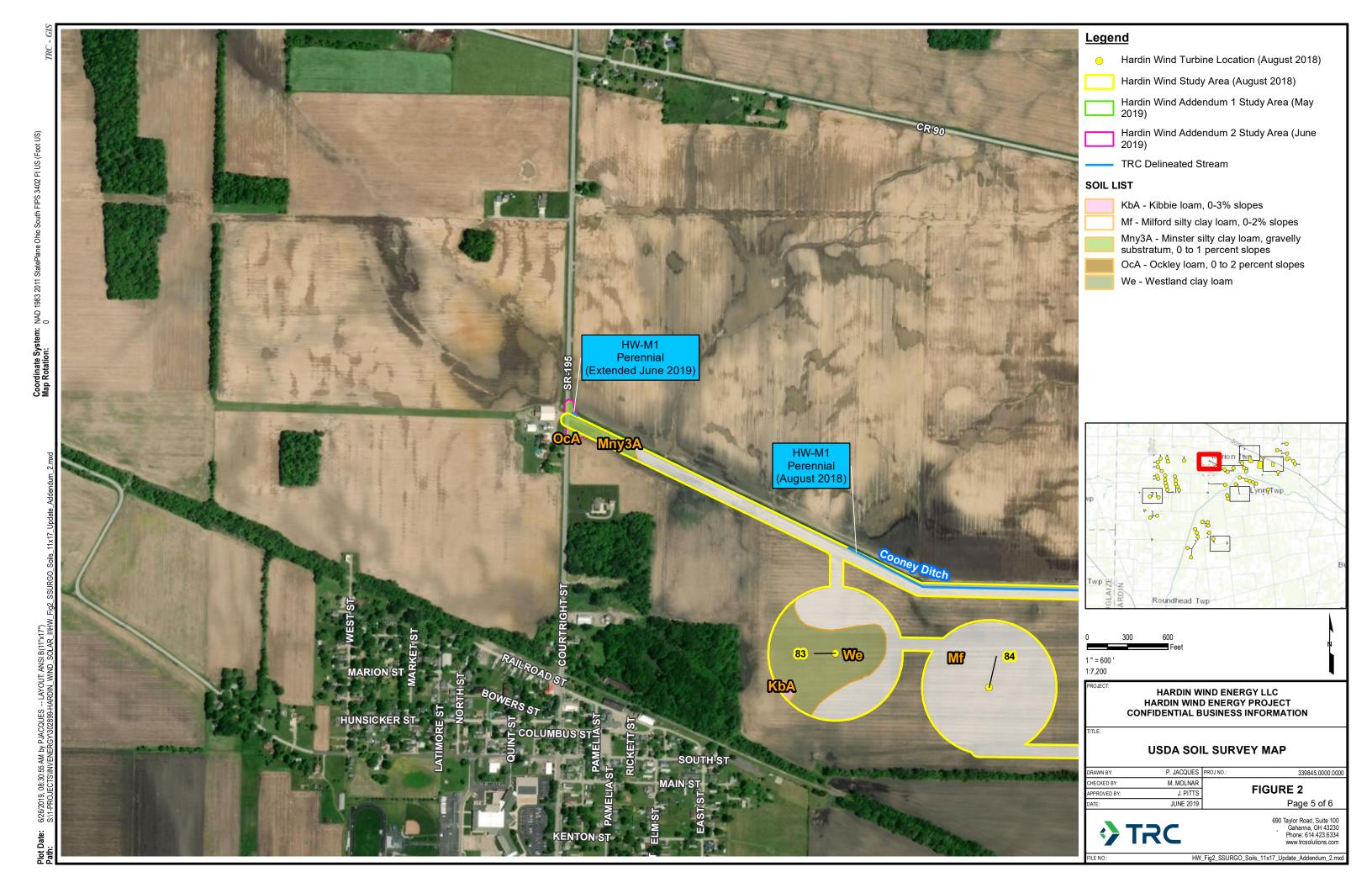














Hardin Wind Addendum 1 Study Area (May 2019)

Hardin Wind Addendum 2 Study Area (June 2019)

PEM Wetland

Sample Point





HARDIN WIND ENERGY LLC HARDIN WIND ENERGY PROJECT CONFIDENTIAL BUSINESS INFORMATION

DELINEATED RESOURCE MAP W-MRR-1

P. JACQUES PROJ NO.:

M. MOLNAR

J. PITTS

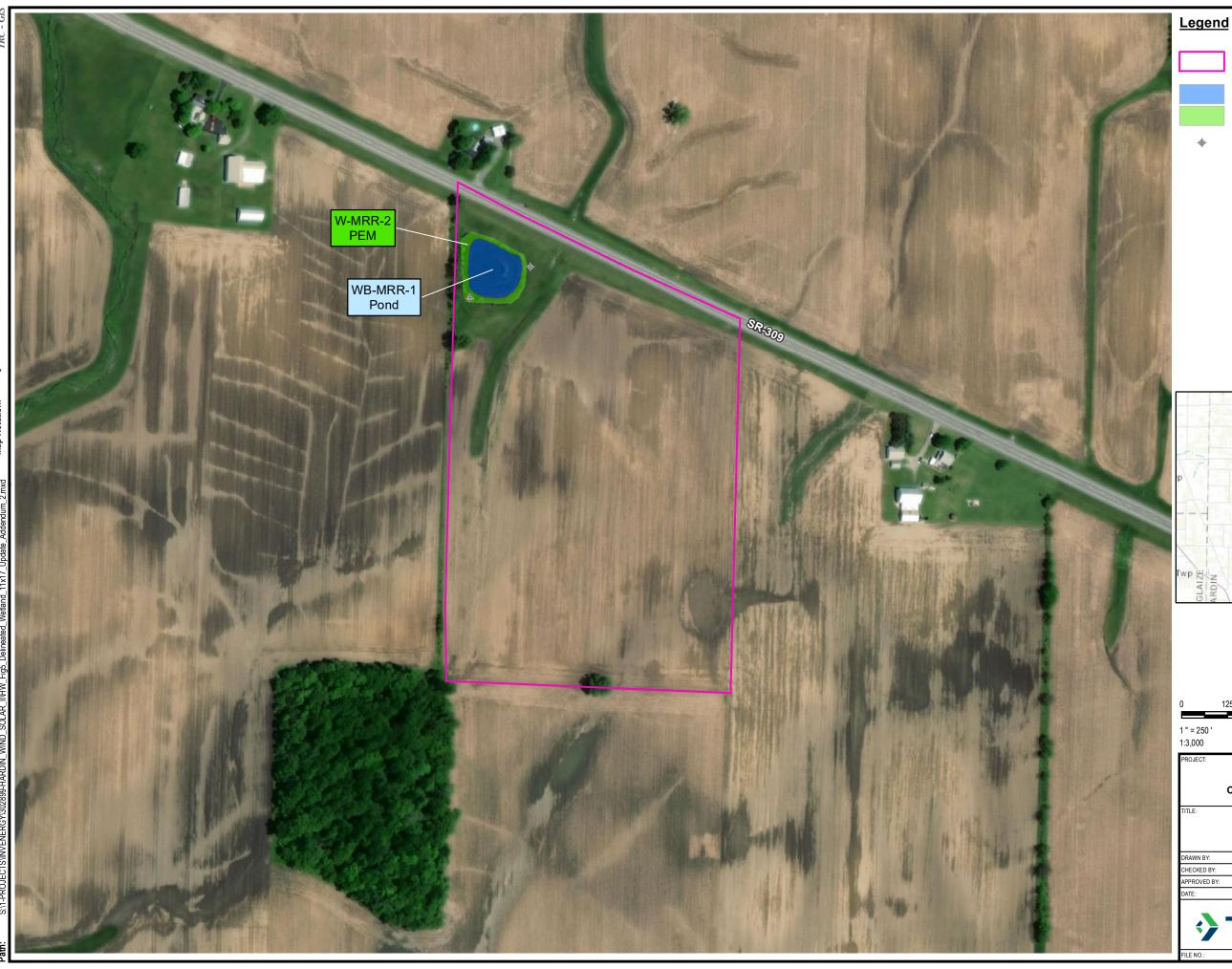
JUNE 2019

339845.0000.0000 FIGURE 5

Page 1 of 8



690 Taylor Road, Suite 100 Gahanna, OH 43230 Phone: 614.423.6334 www.trcsolutions.com



Hardin Wind Addendum 2 Study Area (June 2019)



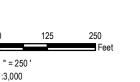
Waterbody / Pond



PEM Wetland

Sample Point





HARDIN WIND ENERGY LLC HARDIN WIND ENERGY PROJECT CONFIDENTIAL BUSINESS INFORMATION

DELINEATED RESOURCE MAP

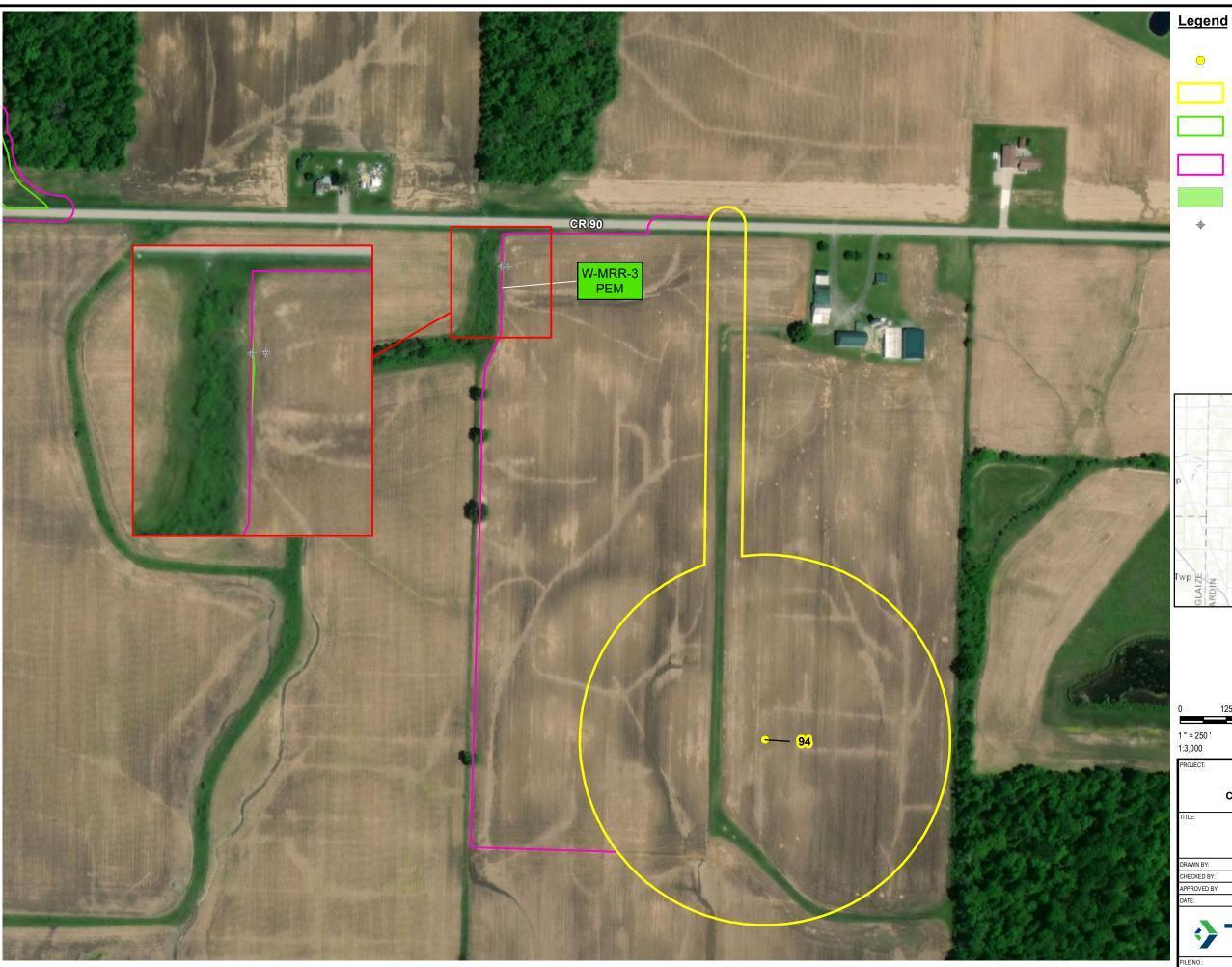
W-MRR-2 & WB-MRR-1 P. JACQUES PROJ NO.:
M. MOLNAR
J. PITTS
JUNE 2019

339845.0000.0000 FIGURE 5



690 Taylor Road, Suite 100 Gahanna, OH 43230 Phone: 614.423.6334 www.trcsolutions.com

Page 2 of 8



Hardin Wind Turbine Location (August 2018)

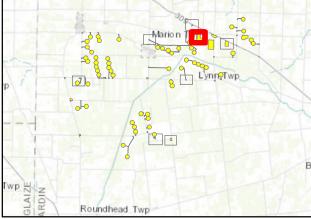
Hardin Wind Study Area (August 2018)

Hardin Wind Addendum 1 Study Area (May 2019)

Hardin Wind Addendum 2 Study Area (June 2019)

PEM Wetland

Sample Point



HARDIN WIND ENERGY LLC HARDIN WIND ENERGY PROJECT CONFIDENTIAL BUSINESS INFORMATION

DELINEATED RESOURCE MAP W-MRR-3

	DRAWN BY:	P. JACQUES	PROJ NO.: 339845.0000.0000
	CHECKED BY:	M. MOLNAR	
	APPROVED BY:	J. PITTS	FIGURE 5
ı	DATE:	JUNE 2019	Page 3 of 8



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339845.0000.0000

Page 4 of 8

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FIGURE 5



Hardin Wind Addendum 1 Study Area (May 2019)

Hardin Wind Addendum 2 Study Area (June 2019)

PEM Wetland

Sample Point





HARDIN WIND ENERGY LLC HARDIN WIND ENERGY PROJECT CONFIDENTIAL BUSINESS INFORMATION

DELINEATED RESOURCE MAP W-MRR-5

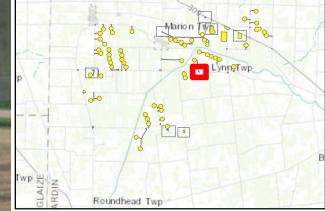
	DRAWN BY:	P. JACQUES	PROJ NO.:
	CHECKED BY:	M. MOLNAR	
	APPROVED BY:	J. PITTS	

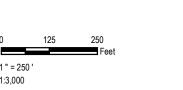
339845.0000.0000 FIGURE 5

◆ TRC

Page 5 of 8

Legend Hardin Wind Study Area (August 2018) Hardin Wind Addendum 1 Study Area (May 2019) Hardin Wind Addendum 2 Study Area (June 2019) TRC Delineated Stream





HARDIN WIND ENERGY LLC
HARDIN WIND ENERGY PROJECT
CONFIDENTIAL BUSINESS INFORMATION

DELINEATED RESOURCE MAP S-MRR-2

	DRAWN BY:	P. JACQUES	PROJ NO.:
	CHECKED BY:	M. MOLNAR	
3	APPROVED BY:	J. PITTS	FIC
			1

IGURE 5 Page 6 of 8



339845.0000.0000

HW_Fig5_Delineated_Wetland_11x17_Update_Addendum_2.mxd



HW_Fig5_Delineated_Wetland_11x17_Update_Addendum_2.mxd

HW_Fig5_Delineated_Wetland_11x17_Update_Addendum_2.mxd

Appendix B Photographic Log



2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 1.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-1 facing north.



Photo No. 2.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-1 facing east.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 3.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-1 facing south.



Photo No. 4.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-1 facing west.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 5.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-2 facing north.



Photo No. 6.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-2 facing east.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Site Location:

Project No.

Hardin Wind Energy LLC

Hardin County, Ohio

339845.0000.0000

Photo No. 7.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-2 facing south.



Photo No. 8.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-2 facing west.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 9.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-3 facing north.



Photo No. 10.

Date:

June 19, 2019

Description: View

View of wetland W-MRR-3 facing east.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 11.

Date:

June 19, 2019

Description:

View

View of wetland W-MRR-3 facing south.



Photo No. 12.

Date:

June 19, 2019

Description: View

View of wetland W-MRR-3 facing west.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 13.

Date:

June 20, 2019

Description:

View

View of wetland W-MRR-4 facing north.



Photo No. 14.

Date:

June 20, 2019

Description:

View

View of wetland W-MRR-4 facing east.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 15.

Date:

June 20, 2019

Description:

View

View of wetland W-MRR-4 facing south.



Photo No. 16.

Date:

June 20, 2019

Description: View

View of wetland W-MRR-4 facing west.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 17.

Date:

June 20, 2019

Description:

View

View of wetland W-MRR-5 facing north.



Photo No. 18.

Date:

June 20, 2019

Description: View

View of wetland W-MRR-5 facing east.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 19.

Date:

June 20, 2019

Description:

View

View of wetland W-MRR-5 facing south.



Photo No. 20.

Date:

June 20, 2019

Description: View

View of wetland W-MRR-5 facing west.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Hardin Wind Energy LLC

Site Location:

Hardin County, Ohio

Project No.

339845.0000.0000

Photo No. 21.

Date:

June 19, 2019

Description:

View

View of stream S-MRR-2 facing upstream.



Photo No. 22.

Date:

June 19, 2019

Description: View

View of stream S-

MRR-2 facing downstream.





2019 Hardin Wind Addendum 2 Wetland and Other Waters of the US Delineation

Client Name:

Site Location:

Project No.

Hardin Wind Energy LLC

Hardin County, Ohio

339845.0000.0000

Photo No. 23.

Date:

June 19, 2019

Description:

View

View of excess turbidity observed within stream S-MRR-2.



Photo No. 24.

Date:

June 19, 2019

Description: View

Representative view of WB-MRR-1 facing south. Wetland W-MRR-2 is located on the fringe of WB-MRR-1.



Appendix C USACE Wetland Determination Data Forms

Project/Site: 339845: Hardin Wind Energy I	Project	City/Co	_{unty:} <u>Hardi</u>	n County	Sampling Date: 6/14/1
Applicant/Owner: Hardin Wind Energy, LLC	C. (Invene	rgy)		State: <u>OH</u>	Sampling Point: W. MRR-
Investigator(s): WPitts; S. Bender M. Ray	T. Rodin	, Section	, Township, Ra	inge: <u>Marian</u>	
Landform (hillslope, terrace, etc.): Depre 6500	1		Local relief	(concave, convex, none):	Contove
Landform (hillslope, terrace, etc.): Degrees or Slope (%): Lat: (10,70983)		Lona:	- 85.79	916	Datum: WGS84
Soil Map Unit Name:					
Are climatic / hydrologic conditions on the site typical for t	his time of us	n=2 Vo	X No	"If no evaloin in D	pressing)
					resent? Yes X No No
Are Vegetation, Soil, or Hydrology					
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site ma			•	eeded, explain any answer	
	No	1	<u> </u>		
Hydric Soil Present? Yes X		ı	s the Sampled	l Area	
Wetland Hydrology Present? Yes X			within a Wetlar	nd? Yes X	No
Remarks:		l		.	
All 3 criteria have been met. Area is	a wetland	d.			
VEGETATION – Use scientific names of plant	S.				
201	Absolute	Domin	nant Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 30') 1. N/A	% Cover	Specie	es? Status	Number of Dominant Sp That Are OBL, FACW, o	€ 1
2. 3.				Total Number of Domina Species Across All Strat	
4.				openies ricross rin exist	u
5				Percent of Dominant Sp That Are OBL, FACW, of	recies or FAC: 100% (A/B)
		= Total	Cover		
Sapling/Shrub Stratum (Plot size: 15')		.12		Prevalence Index work	
1. Carnos -arymmany,		1,6	5 7.62	Total % Cover of:	
2				1 · · · · · · · · · · · · · · · · · · ·	x1= 5
3				FACW species	
4				_) x3 = <u>60</u>
5					x4= <u> </u>
Herb Stratum (Plot size: 5')		= lotal	Cover		(A) $\frac{205}{}$ (B)
1. Phalare avenduncia	30	Yes	Fech	Column Totals:	(A) (B)
2. curex Cristatella	30	Ye	5 Facw	Prevalence Index	= B/A = 2.16
3. Carex volapennedu	10	No	Fecw	Hydrophytic Vegetatio	n Indicators:
4. Eupatorium perkolatum	3	NO	OBL	1 - Rapid Test for H	ydrophytic Vegetation
4. Eupatorium pertalatum 5. Aporynum Cannabinum	_ 5	No	FOC	× 2 - Dominance Test	is >50%
6				X 3 - Prevalence Inde	
7				4 - Morphological A	daptations¹ (Provide supporting or on a separate sheet)
8					hytic Vegetation¹ (Explain)
9				Problematic Hydrop	Trytic vegetation (Explain)
10.				Indicators of hydric soil	and wetland hydrology must
Woody Vine Stratum (Plot size: 30')		= Total	Cover	be present, unless distu	rbed or problematic.
1.				Hydrophytic	
2				Vegetation Present? Yes	;_X No
		= Total	Cover	, 1000iki 103	· 11V
Remarks: (Include photo numbers here or on a separate	-				
Hydrophytic vegetation criterion ha	as been m	et.			
				÷	

Profile Desci	ription: (Describe	to the depth r	needed to docu	ment the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0-12	10/R3/1	80	10/R5/6	20	<u> </u>	<u> </u>	clayey	
				- —			•	
¹Tyne: C=Co	ncentration, D=Dep	letion. RM=Re	duced Matrix M	S=Masked	Sand Gr	ains.	² Location	: PL=Pore Lining, M=Matrix.
Hydric Soil I								for Problematic Hydric Soils ³ :
Histosol (Sandy	Gleyed Mar	trix (S4)		Coast	Prairie Redox (A16)
	ipedon (A2)			Redox (S5)			Dark S	Surface (S7)
Black His			Strippe	d Matrix (S	6)			anganese Masses (F12)
	n Sulfide (A4)			Mucky Min				hallow Dark Surface (TF12)
	Layers (A5)			Gleyed Ma	, ,		Other	(Explain in Remarks)
2 cm Mus	, ,	- (844)		ed Matrix (F				i
_ ·	Below Dark Surfaction (A12)	e (A11)		Dark Surfa ed Dark Sui			3Indicators	of hydrophytic vegetation and
_	ucky Mineral (S1)			Depression	, ,	ı		d hydrology must be present,
_	cky Peat or Peat (S	3)		Доргоссіс.	(,			disturbed or problematic.
	ayer (if observed):							
Type:			_				-	ν .
•	hes):						Hydric Soil	Present? Yes X No
Remarks:							1	
	c soil criterior	has been	met.					
HYDROLOG								
Wetland Hyd	Irology Indicators:							
	ators (minimum of o	ne is required:						ary Indicators (minimum of two required)
∑ Surface \				ined Leave				face Soil Cracks (B6)
— -	ter Table (A2)			auna (B13)			· · · · · · · · · · · · · · · · · · ·	inage Patterns (B10)
Saturatio	• •			atic Plants				Season Water Table (C2)
Water Ma	• •			Sulfide Oc				yfish Burrows (C8)
	t Deposits (B2)			Rhizospher				uration Visible on Aerial Imagery (C9)
	osits (B3)			of Reduce on Reduction		-	_	nted or Stressed Plants (D1) omorphic Position (D2)
	t or Crust (B4) osits (B5)		·	s Surface (u 30115 (00		C-Neutral Test (D5)
	on Visible on Aerial I	menery (B7)		Well Data			2) (100 kg 100 kg 100 kg
	Vegetated Concave			plain in Rei				
Field Observ		/						
Surface Water		es V No	Depth (ir	ches):	Zin			
Water Table I		es No		ches):		_		
Saturation Pr			Depth (ir		614	— Wetia	and Hydrolog	y Present? Yes X No
(includes cap	illary fringe)							
Describe Rec	orded Data (stream	gauge, monito	oring well, aerial	photos, pre	evious ins	pections),	if available:	
	N/A							
Remarks:								
Wet	land hydrolog	y criterior	n has been n	net.				

Project/Site: 339845: Hardin Wind Energy		City/County:	Hard	in County	Sampling Date:	6/19/19
Applicant/Owner: Hardin Wind Energy, LLC	ು. (Invene	rgy)		State: <u>OH</u>	Sampling Point;	UPL- MRR
Investigator(s): J, Pitts; S. Bender		Section, To	wnship, Ra	ange:		
Landform (hillslope, terrace, etc.):						
Slope (%): Lat:/_() . 70937						 S84
Soil Map Unit Name:						
Are climatic / hydrologic conditions on the site typical for						
					·	
Are Vegetation, Soil, or Hydrology						No
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site ma				eeded, explain any answe locations, transects		asturae atr
Hydrophytic Vegetation Present? Yes			, point	- Courtons, transcotts	, miportant n	atures, etc.
Hydric Soil Present? Yes		Is the	Sample	i Area		
Wetland Hydrology Present? Yes		withi	n a Wetla	nd? Yes	No_X_	
Remarks: of 3 criteria have been met. Are		wetland.				
VEGETATION – Use scientific names of plan		-				
<u>Tree Stratum</u> (Plot size: <u>30' Yadaş</u>) 1. <u>/V/A</u>	% Cover	Dominant Species?	Status	Number of Dominant Sp That Are OBL, FACW, of	pecies	(A)
2				Total Number of Domina		_
3			• • • • • • • • • • • • • • • • • • • •	Species Across All Stra	ta:	(B)
5.				Percent of Dominant Sp	ecies	
				That Are OBL, FACW, o	or FAC:	(A/B)
Sapling/Shrub Stratum (Plot size: 15')				Prevalence Index worl		
1				Total % Cover of:		_
2.				OBL species		
3.				FACW species		
4				FAC species		
5.				FACU species		
Herb Stratum (Plot size: 5' //)		= Total Cov		UPL species		
1. Annul Bleakard	5			Column Totals:	(A)	(B)
1. found also and 2. Coord Roywed				Prevalence index	= B/A =	
3. carla thesta				Hydrophytic Vegetatio	n Indicators:	
4. Poa anosa				1 - Rapid Test for H	lydro phy tic Vegel	ation
5. 1 in a second	5			2 - Dominance Test	is >50%	
6				3 - Prevalence Inde	x is ≤3.0¹	
7.	<u> </u>			4 - Morphological A	daptations¹ (Prov	ide supporting
8					or on a separate	
9				Problematic Hydrop	mytic vegetation	(⊏xhiaiu)
Woody Vine Stratum (Plot size: 30')	4	= Total Cove	er	¹ Indicators of hydric soil be present, unless distu	and wetland hyd rbed or problema	rology must tic.
1				Hydrophytic		
2.				Vegetation		
		= Total Cove	er .	Present? Yes	No	<u> </u>
Remarks: (Include photo numbers here or on a separate Hydrophytic vegetation criterion h	=	met.	¥******			

Depth Matrix Sinches Color (moist) %		
	Redox Features Color (moist) % Type¹ Loc	Z Texture Remarks
1-16 111111 100		C(q)xi/
		2
<u> </u>	I=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
ydric Soil Indicators:		
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16) Dark Surface (S7)
Histic Epipedon (A2)	Sandy Redox (S5) Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Black Histic (A3) Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	_
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
_ Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,
_ 5 cm Mucky Peat or Peat (S3)		untess disturbed or problematic.
estrictive Layer (if observed):		
Type:		Hydric Soil Present? Yes No
Depth (inches):		11,011.0 DOINT 10001111 1100 110
	Not Becu met.	
VDBOLOGY		
Vetland Hydrology Indicators:		Secondary Indicators (minimum of two required
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requ	uired: check all that apply)	Secondary Indicators (minimum of two required
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requ Surface Water (A1)	uired: check all that apply) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
letland Hydrology Indicators: timary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
letland Hydrology Indicators: rimary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2) Saturation (A3)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requestriated Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requestriated Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requestring to the second	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) S (C6) Geomorphic Position (D2)
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requestrimary Indicators (minimum of one is requestrimary Indicators (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one is requestring to the content of the content	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) S (C6) Geomorphic Position (D2)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one is requised.) 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 (E	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) S (C6) Geomorphic Position (D2)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one is required) 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 (E Sparsely Vegetated Concave Surface iield Observations:	uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) 37) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) S (C6) Geomorphic Position (D2)
Vetland Hydrology Indicators: Primary Indicators (minimum of one is required.) 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 (E Sparsely Vegetated Concave Surface (Field Observations:	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) S (C6) Geomorphic Position (D2)
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 (E Sparsely Vegetated Concave Surface (Field Observations: Surface Water Present? Ves Vater Table Present?	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one is required.) 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 (E Sparsely Vegetated Concave Surface (Ed) ield Observations: Surface Water Present? Ves	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Vetland Hydrology Indicators: rimary Indicators (minimum of one is requised.) 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 (Based) Sparsely Vegetated Concave Surface iteld Observations: surface Water Present? Vater Table Present? Vater Table Present? Ves includes capillary fringe) Vescribe Recorded Data (stream gauge, manual contents on the contents of th	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Vetland Hydrology Indicators: Primary Indicators (minimum of one is required.) 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 (Based Concave Surface Vater Table Present? Vater Table Present? Vater Table Present? Ves Saturation Present? Yes includes capillary fringe) Describe Recorded Data (stream gauge, marks:	water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches): nonitoring well, aerial photos, previous inspection	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Vetland Hydrology Indicators: Irimary Indicators (minimum of one is required.) 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 (Based) Sparsely Vegetated Concave Surface (Itel Observations: Surface Water Present? Yes	water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches): nonitoring well, aerial photos, previous inspection	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

WETLAND DETERMINATION DATA FORM - Midwest Region 345: Hardin Wind Energy Project City/County Hardin County Sampling Date: 4/11/ Hardin Wind Energy, LLC. (Invenergy) State: OH Sampling Point: We Mile -2 J. Pitts; S. Bender Section, Township, Range: nillslope, terrace, etc.): Pepresson Local relief (concave, convex, none): on the ve o): Lat: 110.69978 Long: 83.72057 Datum: WGS84 _____ NWI classification: ____ s 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.

is the Sampled Area Hydric Soil Present? Yes X No within a Wetland?

Wetland Hydrology Present?					}	es.	<u>X</u>	_	No	
Remarks:										
A 11 A				1			4			

Yes X No_

All 3 criteria have been met. Area is a wetland.

Yes X No

VEGETATION – Use scientific names of plants.

Hydrophytic Vegetation Present?

701	Absolute		t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30'		Species?		Number of Dominant Species
1. Quevius Palvolia		Y~5	TOCK	That Are OBL, FACW, or FAC:(O (A)
2				
3.				Total Number of Dominant Species Across All Strata:
4.				Opecies Across Air Strata. (B)
			· 	Percent of Dominant Species
5.				That Are OBL, FACW, or FAC: 100 % (A/B)
Sapling/Shrub Stratum (Plot size: 15')	10	= Total Co	ver	Prevalence Index worksheet:
1. Populus del tardos	20	Yes	FUC	The state of the s
•				Total % Cover of: Multiply by:
2. Solix interer		405	Facw	OBL species <u>70</u> x 1 = <u>70</u>
3. Solix exigual	10	NO	FOCW	FACW species 60 x2= / 7.0
4. avering Palvatra	3	NO	Frew	FAC species $\underline{45}$ x3 = $\underline{135}$
5. Laugh regued Dagword	15	Yes	FUL	FACU species 0 x4 = 0
	7/)	= Total Co	ver	UPL species 0 x5= 0
Herb Stratum (Plot size: 5')		, , , , , , ,	•••	Column Totals: 175 (A) 325 (B)
1. Typhe angest tois	20	Yes	OBL	Column Totals. 175 (A) (B)
	50	Ye5	OBL	Prevalence Index = B/A =/.86
2. types x gloute 3. Copes (Vistatelle	5	$\sqrt{0}$	Facw	Hydrophytic Vegetation Indicators:
4. Priver VII pain dey	3	NO	FecW	1 - Rapid Test for Hydrophytic Vegetation
5. Corex Ayarona	5	NO	Focw	≥ 2 - Dominance Test is >50%
6. Heinp doglare	10	NQ	Foc	3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations (Provide supporting
8.				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation¹ (Explain)
9	·			
10.				¹tndicators of hydric soil and wetland hydrology must
Moody Vina Stratum (Blot size: 30'	45/	= Total Co	ver	be present, unless disturbed or problematic.
/ (Flot size)				
1				Hydrophytic
2				Vegetation
		= Total Co	/er	Present? Yes X No
Remarks: (Include photo numbers here or on a separate s	heet.)			
Hydrophytic vegetation criterion has	been m	et.		
, 1 , 0	 			

ofile Description: (Describe to the				or commit	n die anseile	or manators.;
epth <u>Matrix</u> nches) <u>Color (moist) %</u>		x Feature %	S Type¹	Loc²	Texture	Remarks
1-10 104K 1/1 80		211		M		
		20	7	M	Cluper	
1-22 1094 5/1 80	1072318	20			(14/24	
		<u> </u>				
	<u> </u>					
/pe: C=Concentration, D=Depletion,	RM=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location	PL=Pore Lining, M=Matrix.
dric Soil Indicators:	111111111111111111111111111111111111111	<u> </u>				for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy	Gleyed M	atrix (S4)		Coast I	Prairie Redox (A16)
Histic Epipedon (A2)		Redox (S				urface (S7)
_ Black Histic (A3)		d Matrix (•			anganese Masses (F12)
Hydrogen Sulfide (A4)			neral (F1)			hallow Dark Surface (TF12) (Explain in Remarks)
Stratified Layers (A5)	Loamy Deplete	Gleyed M ad Matrix			Onler	Cxpiair in Remarks,
_ 2 cm Muck (A10) _ Depleted Below Dark Surface (A11		Dark Surf				
Thick Dark Surface (A12)	Deplet		urface (F7)		of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox	Depression	ns (F8)			d hydrology must be present,
5 cm Mucky Peat or Peat (S3)					unless	disturbed or problematic.
strictive Layer (if observed):						
Type:					Hydric Soil	Present? Yes X No
Depth (inches):					1	
emarks: Hydric soil criterion has	s been met.					•
emarks: Hydric soil criterion has	s been met.					•
emarks: Hydric soil criterion has 'DROLOGY	s been met.					•
emarks: Hydric soil criterion has 'DROLOGY Tetland Hydrology Indicators:					Socoada	en ladicators (minimum of two require
emarks: Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is a	required; check all that a		(80)			
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is in Surface Water (A1)	required; check all that a	ained Lea			Sur	face Soil Cracks (B6)
Emarks: Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is in a surface Water (A1) High Water Table (A2)	required; check all that a Water-St Aquatic F	ained Lea auna (B1	3)		Sur _ _ > Dra	face Soil Cracks (B6) inage Patterns (B10)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is in the surface Water (A1) High Water Table (A2) Saturation (A3)	required; check all that a Water-St Aquatic F True Aqu	ained Lea auna (B1 atic Plant	3) s (814)		Sur Dra Dry	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is I Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	required; check all that a — Water-St — Aquatic F — True Aqu — Hydrogei	ained Lea fauna (B1 latic Plant n Sulfide (3) s (B14) odor (C1)	ving Roots	Sur Dra Dry Cra	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is I Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	required: check all that a Water-St Aquatic F True Aqu Hydroger Oxidized	ained Lea fauna (B1 latic Plant n Sulfide (Rhizosph	3) s (814)		Sur Dra Dry Cra s (C3) Sat Stu	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Procession of the process of the pro	required: check all that a Water-St Aquatic F True Aqu Hydroget Oxidized	ained Lea fauna (B1 atic Plant n Sulfide (Rhizosph e of Reduc	3) s (814) odor (C1) eres on Liv	4)	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is I Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	required: check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent In	ained Lea fauna (B1 atic Plant n Sulfide (Rhizosph e of Reduc	3) s (814) Odor (C1) eres on Lived Iron (C	4)	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Processing the process of the proces	required: check all that a Water-St Aquatic F Hydroget Oxidized Presencet Recent It Thin Muc	ained Lea fauna (B1 latic Plant n Sulfide (Rhizosph e of Reduc ron Reduc	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7)	4)	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2)
### Hydric soil criterion has ### TOROLOGY TOROLOGY	required: check all that a Water-St Aquatic F Hydroget Oxidized Presencet Recent It Thin Muc	ained Lea fauna (B1 latic Plant n Sulfide (Rhizosph e of Reduc on Reduc ck Surface	3) s (B14) cloor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) pmorphic Positlon (D2)
Processor of the proces	required; check all that a Water-St Aquatic F Hydroget Oxidized Presencet Recent In Thin Muc ary (B7) Gauge o ace (B8) Other (E.	ained Lea fauna (B1 atic Plant n Sulfide (Rhizosph e of Reduc on Reduc ck Surface r Well Dat xpiain in F	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) pmorphic Positlon (D2)
Processor of the proces	required; check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc Ty (B7) Gauge o ace (B8) Other (E.	ained Lea auna (B1 atic Plant n Sulfide (Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F	3) s (814) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dry Cra s (C3) Sat Stu C6) Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) iomorphic Positlon (D2)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is referred by the content of the content o	required; check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc Y (B7) Gauge o ace (B8) Other (E No Depth (i No	ained Lea auna (B1 atic Plant n Sulfide (Rhizosph e of Reduct con Reduct k Surface r Well Dat xplain in R nches):	3) s (814) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (0	Sur Dry Cra s (C3) Sat Stu C6) Geo FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is in its 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 Image Sparsely Vegetated Concave Surface Water Present? Ves Vater Table Present? Ves Saturation Present? Ves Sparticulates capillary fringe	required: check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent Ir Thin Muc Thin Muc Thin Muc Cauge o Other (E No Depth (i No Depth (i No Depth (i Depth (i No Depth (i	ained Lea fauna (B1 fatic Plant in Sulfide (Rhizosph for Reduct f	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dra Dry Cra s (C3) Sat Stu C6) <u>太</u> Geo FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) pmorphic Positlon (D2)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is I 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 Image Sparsely Vegetated Concave Surface Water Present? Ves Inter Table Present? Saturation Present? Saturation Present? Secribe Recorded Data (stream gauge	required: check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent Ir Thin Muc Thin Muc Thin Muc Cauge o Other (E No Depth (i No Depth (i No Depth (i Depth (i No Depth (i	ained Lea fauna (B1 fatic Plant in Sulfide (Rhizosph for Reduct f	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dra Dry Cra s (C3) Sat Stu C6) <u>太</u> Geo FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Processor of the proces	required: check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent Ir Thin Muc Thin Muc Thin Muc Cauge o Other (E No Depth (i No Depth (i No Depth (i Depth (i No Depth (i	ained Lea fauna (B1 fatic Plant in Sulfide (Rhizosph for Reduct f	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dra Dry Cra s (C3) Sat Stu C6) <u>太</u> Geo FAC	inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Property of the property of th	required: check all that a Water-St Aquatic F True Aqu Hydroget Oxidized Presence Recent It Thin Muc ry (B7) Gauge o ace (B8) Other (E: No Depth (it) No Depth (it) No Depth (it)	ained Lea ained Lea aic Plant atic Plant n Sulfide (Rhizosph e of Reduc on Reduc on Reduc on Reduc or Well Dat xplain in F nches): nches): l photos,	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dra Dry Cra s (C3) Sat Stu C6) <u>太</u> Geo FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Hydric soil criterion has DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is I 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 Image Sparsely Vegetated Concave Surfaceld Observations: urface Water Present? Ves aturation Present? Yes aturation Present? Yes acturation Present? Yes acturation Present? Yes Cater Table Present?	required: check all that a Water-St Aquatic F True Aqu Hydroget Oxidized Presence Recent It Thin Muc ry (B7) Gauge o ace (B8) Other (E: No Depth (it) No Depth (it) No Depth (it)	ained Lea ained Lea aic Plant atic Plant n Sulfide (Rhizosph e of Reduc on Reduc on Reduc on Reduc or Well Dat xplain in F nches): nches): l photos,	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Sur Dra Dry Cra s (C3) Sat Stu C6) <u>太</u> Geo FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)

))	City/County	in County Sampling Date: 6/19/19
Energy, L	LC. (Invene	ergy)	State: OH Sampling Point: UPL-MRR-
er		Section, Township, Ra	ange:
erreice		Local relief	f (concave, convex, none):COUVEY
1.69960	<u> </u>	Long: <u>- 83.72</u>	OO9 Datum: WGS84
			NWI classification:
ne site typical f	or this time of ye	ear? Yes No _	(If no, explain in Remarks.)
Hydrology	significantly	disturbed? Are	"Normal Circumstances" present? Yes No
Hydrology	naturally pr	oblematic? (If n	eeded, explain any answers in Remarks.)
ttach site n	nap showing	g sampling point l	locations, transects, important features, etc.
Yes	No	is the Sample	7.0
Yes	No	within a Wetla	nd? Yes NoX
en met. A	rea is not a	wetland.	
ames of pla	ants.		
\			Dominance Test worksheet:
			Number of Dominant Species That Are OBL, FACW, or FAC: (A)
			Total Number of Dominant Species Across All Strata: (B)
			Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
_	10	= Total Cover	<u> </u>
	=		Prevalence Index worksheet:
			FACW species 0 $x = 0$
			FAC species O x 3 = O
			FACU species / 00 x 4 = 400
		= Total Cover	UPL species 10 x 5 = 50
		· 10 5 1	Column Totals: 110 (A) 450 (B)
		NO FOLU	Prevalence Index = B/A = \(\frac{\(\lambda\) \(\lambda\)}{\(\lambda\)}
			Hydrophytic Vegetation Indicators:
		· —	1 - Rapid Test for Hydrophytic Vegetation
	30		2 - Dominance Test is >50%
	<u> </u>		3 - Prevalence Index is ≤3.0¹
			4 - Morphological Adaptations¹ (Provide supporting
			data in Remarks or on a separate sheet)
			Problematic Hydrophytic Vegetation' (Explain)
			1
r	100	= Total Cover	¹indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
)			<u> </u>
			Hydrophytic Vegetation
			Present? Yes No
·		- rotal Cover	
e or on a sena:	rate sheet)		I I
	rate sneet.) has <u>Not Be</u>	e n met	
	Energy, Ler even re even re he site typical thydrology Hydrology ttach site in Yes Yes Yes Yes The names of plants for a control of the site in Yes	Energy, LLC. (Invented erections). (CIP (66)). (CIP (6	Energy, LLC. (Invenergy) Er Section, Township, Range of Part of Part of Section, Township, Range of Part of Part of Section, Township, Range of Part of P

Profile Description: (Describe to the de	epth needed to docum	nent the i	ndicator o	or confirm	the absence o	of indicators.)
Depth Matrix	Redo	x Features	s			
(inches) Color (moist) %	Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
0-12 10TR 4/2 100						
12-22 1042 4/2 90	10 YR 5/8	10		M	Clayey.	
¹Type: C=Concentration, D=Depletion, RI Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3) Restrictive Layer (if observed): Type:	Sandy G Sandy R Stripped Loamy M Depleted Redox D	Gleyed Ma Redox (S5 I Matrix (S Mucky Min Gleyed Ma d Matrix (F Dark Surfa	trix (S4)) i6) neral (F1) atrix (F2) F3) ce (F6) rface (F7)	ins.	Indicators f Coast P Dark Su Iron-Ma Very Sh Other (E	PL=Pore Lining, M=Matrix. For Problematic Hydric Soils ³ : Frairie Redox (A16) Frairie Redox (A16) Frairie Redox (F12) Frairie Redox (F12) Frairie Redox (A16) Frairie Red
					Hydric Soil F	Present? Yes No
Depth (inches):Remarks:						
Hydric soil criterion has _						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one is requested) 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 (Image) Sparsely Vegetated Concave Surface Field Observations:	Water-Stain Aquatic Fa Arue Aquatic Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reduction Surface (Vell Data	(B14) for (C1) res on Livin d Iron (C4 on in Tilled C7) (D9))	Surfa Drain Dry-S Crayf (C3) Saturt Stunt	y Indicators (minimum of two required) ce Soil Cracks (B6) age Patterns (B10) deason Water Table (C2) dish Burrows (C8) ation Visible on Aerial Imagery (C9) ded or Stressed Plants (D1) norphic Position (D2) Neutral Test (D5)
	×					
	No Depth (inc					
	No Depth (inc			1	74.1 MORE - 91 - 91	~
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, n	No Depth (inc					Present? Yes No
N/A				/	146	4
Remarks: Wetland hydrology crite	rion has Not 19	met.				
, 0,		300 N				

Project/Site: 339845: Hardin Wind Energy Pr	roject (City/County: Hardi	n County Sampling Date: 6/11/19
Applicant/Owner: Hardin Wind Energy, LLC.	(Invene	rgy) .	State: OH Sampling Point: W-MRR-3
Investigator(s): J. Pitts; S. Bender M. Ray			
Landform (hillstope, terrace, etc.): Depress /3 m	•	Local relief	(concave, convex, none):
Slope (%): Lat: <u>10.70358</u>		Long: <u>83 - /</u>	7.91153 Datum: WGS84
Soil Map Unit Name: .			NWI classification:
Are climatic / hydrologic conditions on the site typical for thi			
Are Vegetation, Soil, or Hydrology:	significantly	disturbed? Are	*Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blematic? (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X			
Hydric Soil Present? Yes X		Is the Sampled within a Wetlan	37
Wetland Hydrology Present? Yes X N	4o	Within a Wetial	ior res
All 3 criteria have been met. Area is	a wetland	1	
All 5 cincila have been met. Area is	a wettane	1.	
VECETATION Line exignific names of plants		*	1,1
VEGETATION Use scientific names of plants	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30' アログルン)		Species? Status	Number of Dominant Species
1. Julijans Nara	_ <u></u>	Yes Foll	That Are OBL, FACW, or FAC: (A)
2. Papeles de la-des	10	Yes Fac	Total Number of Dominant
3	· ·		Species Across All Strata: (B)
4.			Percent of Dominant Species
5		= Total Cover	That Are OBL, FACW, or FAC: 80 % (A/B)
Sapling/Shrub Stratum (Plot size: 15' radius)			Prevalence index worksheet:
1. Vough leand Dogwood	30	1-es Fec	Total % Cover of: Multiply by:
2			OBL species
3	<u> </u>		FACW species x 2 =
4			FAC species $\frac{90}{100}$ x 3 = $\frac{370}{100}$
5			FACU species $\frac{l 0}{O}$ $x 4 = \frac{l 0}{O}$ UPL species $\frac{l 0}{O}$ $x 5 = \frac{l 0}{O}$
Herb Stratum (Plot size: 5' radirs)	<u>80</u>	= Total Cover	100
1. Phalaus aven Incens	50	Yes Facw	
2. Solidano Oinsutio	20	145 face	Prevalence Index = B/A =
3. Covex nygleacony		NO FOCW	Hydrophytic Vegetation Indicators:
4			1 - Rapid Test for Hydrophytic Vegetation
5			∑ 2 - Dominance Test is >50%
6			× 3 - Prevalence Index is ≤3.0¹
7		The state of the s	4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8			Problematic Hydrophytic Vegetation¹ (Explain)
9			
10.	<u> </u>	= Total Cover	¹Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30' volos)	•		be present, unless disturbed or problematic.
1	<u> </u>		Hydrophytic
2			Vegetation Present? Yes X No
Demodra (Individual State Secretaria)		= Total Cover	
Remarks: (Include photo numbers here or on a separate Hydrophytic vegetation criterion ha		, ot	
Trydrophytic vegetation chieffon ha	s occii iii	ct.	

Sampling Point: W-MMH-3

-	-	-	
c	л		
а	v		ь.

	depth needed to document the indica	tor or commi	me absence of mic	iicators.
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Typ	e¹ Loc²	Tavture	Remarks
		 .		
0-18 104h 4/z 45	1041,18 5	<u>n_u_</u> .	(layay	
	<u> </u>			
				Secretary Secretary Control Control
				
¹ Type: C=Concentration, D=Depletion, I	RM=Reduced Matrix MS=Masked Sand	Grains	2l ocation: Pl =	Pore Lining, M=Matrix.
Hydric Soil Indicators:				oblematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S	4)		Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	/	Dark Surface	· · · · · · · · · · · · · · · · · · ·
Black Histic (A3)	Stripped Matrix (S6)			ese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (I	F1)	_	Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F			in in Remarks)
2 cm Muck (A10)	✓ Depleted Matrix (F3)	•	_ , ,	•
V Depleted Below Dark Surface (A11)		5)		
Thick Dark Surface (A12)	Depleted Dark Surface ((F7)	³ Indicators of hyd	frophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydr	ology must be present,
5 cm Mucky Peat or Peat (S3)			unless distur	bed or problematic.
Restrictive Layer (if observed):				
Type:			Hydric Soil Prese	nt? Yes X No
Depth (inches):			nyaric Soli Prese	ontr Yes No
Remarks:		L		
2/222				
Wetland Hydrology Indicators:				
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re	quired; check all that apply)		Secondary Ind	icators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1)	quired; check all that apply) Water-Stained Leaves (B9)	Surface Se	oil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9 Aquatic Fauna (B13))	Surface Se	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) High Water Table (A2) X Saturation (A3)	Water-Stained Leaves (B9Aquatic Fauna (B13)True Aquatic Plants (B14)	,	Surface So Drainage I Dry-Seaso	oil Cracks (B6) Patterns (B10) In Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1)	 Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C 	1)	Surface So Surface So Dry-Seaso Crayfish B	oil Cracks (B6) Patterns (B10) In Water Table (C2) urrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) High Water Table (A2) X Saturation (A3)	 Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (Company) Oxidized Rhizospheres on 	1) Living Roots (C	Surface So Drainage I Dry-Seaso Crayfish B Saturation	oil Cracks (B6) Patterns (B10) In Water Table (C2) urrows (C8) Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron	1) Living Roots (C (C4)	Surface So Dry-Seaso Crayfish B Saturation Stunted or	oil Cracks (B6) Patterns (B10) In Water Table (C2) It was a serial ser
Wetland Hydrology Indicators: Primary Indicators (minimum of one is region of the image) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T	1) Living Roots (C (C4)	Surface So Dry-Seaso Crayfish B Saturation Stunted or Geomorph	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
Wetland Hydrology Indicators: Primary Indicators (minimum of one is redicators) 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)	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7)	1) Living Roots (C (C4)	Surface So Dry-Seaso Crayfish B Saturation Stunted or	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
Primary Indicators (minimum of one is re X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7)	1) Living Roots (C (C4)	Surface So Dry-Seaso Crayfish B Saturation Stunted or Geomorph	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
Wetland Hydrology Indicators: Primary Indicators (minimum of one is redicators) 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)	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C- Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) (B7) Gauge or Well Data (D9)	1) Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or Geomorph	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) 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 Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) (B7) Gauge or Well Data (D9) ee (B8) Other (Explain in Remarks No Depth (inches):	Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or Geomorph	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
Wetland Hydrology Indicators: Primary Indicators (minimum of one is re X Surface Water (A1) 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 Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) (B7) Gauge or Well Data (D9) ee (B8) Other (Explain in Remarks No Depth (inches):	Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or FAC-Neut	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is reference of the content of	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in T Thin Muck Surface (C7) (B7) Gauge or Well Data (D9) e (B8) Other (Explain in Remarks No Depth (inches): No Depth (inches):	Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or FAC-Neute	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table (C9) Visible on Aerial Imagery (C9) Stressed Plants (D1) In Position (D2) In Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is reference of the content of	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C-Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) (B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or FAC-Neute	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table (C9) Visible on Aerial Imagery (C9) Stressed Plants (D1) In Position (D2) In Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is reference of the image) 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 Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Xincludes capillary fringe) Describe Recorded Data (stream gauge, N/A Remarks:	Water-Stained Leaves (B9 Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C-Oxidized Rhizospheres on Presence of Reduced Iron Recent Iron Reduction in Thin Muck Surface (C7) (B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Living Roots (C (C4) Tilled Soils (C6)	Surface So Dry-Seaso Crayfish B Saturation Stunted or FAC-Neute	oil Cracks (B6) Patterns (B10) In Water Table (C2) In Water Table (C2) In Water Table (C9) In Water Table (C9) Visible on Aerial Imagery (C9) Stressed Plants (D1) In Position (D2) In Test (D5)

roject/Site: 339845: Hardin Wind Energy Pr	roject	City/Coun	ty: <u>Hard</u> i	in County	Sampling Date: <u>6 / /</u>	9/17
pplicant/Owner: Hardin Wind Energy, LLC.	(Invene	rgy)		State: OH	Sampling Point: UP!	L-MKM
vestigator(s): J, Pitts; S. Bender		Section, T	ownship, Ra	ange:		
andform (hillslope, terrace, etc.):					Corvex	
lope (%): Lat:(0.7/0ろ5フ		Lona:	78.711	175	Datum WGS84	
oil Map Unit Name:						
re climatic / hydrologic conditions on the site typical for thi						
re Vegetation, Soil, or Hydrologys						
re Vegetation, Soil, or Hydrology r						No
UMMARY OF FINDINGS – Attach site map	* *		•	eeded, explain any answe locations, transects	-	es. etc.
Hydrophytic Vegetation Present? Yes N					,,	00, 010.
Hydric Soil Present? Yes N			the Sample			
Wetland Hydrology Present? YesN		wit	ihin a Wetla	nd? Yes	NoX	
Remarks: 3 of 3 criteria have been met. Area	is not a	wetlan	d.			
EGETATION – Use scientific names of plants.						
Free Stratum (Plot size: 30')	Absolute % Cover		nt Indicator Status	Dominance Test work		
1. <u>N//</u> +				Number of Dominant Sp That Are OBL, FACW, of		(A)
				That rive God Friend	<u> </u>	_ (17)
•	•			Total Number of Domini Species Across All Stra		(B)
				Opecies Across Air Otta		_ (D)
				Percent of Dominant Sp		/ A (Fig.)
		= Total Co	over	That Are OBL, FACW, o	DEFAC:	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15')				Prevalence Index worl	ksheet:	
- NA					Multiply by:	
·				OBL species	x 1 =	
				FACW species0		
					x 3 =	
				FACU species9	×4= 180	
		= Total Co	over	UPL species()		
erb Stratum (Plot size: 5')		- 0	τ: ./	Column Totals: ()	<u>5 (A) 160</u>	(B)
Pon anyva	<u> </u>	N.A	- 1000	Prevalence Index	4.00	
	- 25		1-0CV			
Rumer crispus	5	<u> </u>	7.000	Hydrophytic Vegetatio		
Fleabone		4x5	FOLV	1	lydrophytic Vegetation	
				2 - Dominance Test		
				3 - Prevalence Inde		r
				4 - Morphological A data in Remarks	aptations" (Provide su or on a separate sheet	
				Problematic Hydrop	•	,
						,
loody Vine Stratum (Plot size: 30')		= Total Co	over	¹ Indicators of hydric soil be present, unless distu	and wetland hydrology rbed or problematic.	must
				Hydrophytic		
				Vegetation		
				Present? Yes	s No_X	

epth Matrix	Redox Features	Taudura	Remarks
nches) Color (moist) %	Color (moist) % Type ¹ Loc ²		Remarks
18 1042 4/4 100		Clayey.	
		<u> </u>	
			
			
			
	//≡Reduced Matrix, MS≂Masked Sand Grains.		PL≂Pore Lining, M=Matrix.
/dric Soil Indicators:			or Problematic Hydric Soils ³ :
_ Histosol (A1)	Sandy Gleyed Matrix (S4)		rairie Redox (A16)
_ Histic Epipedon (A2)	Sandy Redox (S5)	Dark Su	
Black Histic (A3)	Stripped Matrix (S6)		nganese Masses (F12)
_ Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)		allow Dark Surface (TF12) Explain in Remarks)
_ Stratified Layers (A5) 2 cm Muck (A10)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	Other (c	Explain in Remains)
_ 2 cm Muck (A10) _ Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)		
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	3Indicators	of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland	hydrology must be present,
5 cm Mucky Peat or Peat (\$3)		unless	disturbed or problematic.
estrictive Layer (if observed):			
Туре:		Hudeia Sail I	Present? Yes No
		HOVER SUIT	1959III 165 IIU
Hydric soil criterion has _/	Not Bean met.		
emarks: Hydric soil criterion has _/			
emarks: Hydric soil criterion has _/	Not Bean met.		
emarks: Hydric soil criterion has _/ Prevus vs*d &s 'DROLOGY etland Hydrology Indicators:	Not Bean met. agriculture T Phanted	with Con	lest seesou)
emarks: Hydric soil criterion has _/ Prevus vs*d &s 'DROLOGY etland Hydrology Indicators:	Not Bean met. agriculture T Phanted	with Corr	y Indicators (minimum of two requires
Hydric soil criterion has _/ Preving vsed as DROLOGY etland Hydrology Indicators:	wired: check all that apply) Water-Stained Leaves (B9)	with Carr Secondar Surfa	y Indicators (minimum of two required soli Cracks (B6)
Hydric soil criterion has _/ Previous vsed as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requi	Not Bezn met. agriculture C Phunted uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13)	with Care Secondar Surface Drain	y Indicators (minimum of two required sold Cracks (B6) hage Patterns (B10)
Hydric soil criterion has _/ Previous vsed as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is required) Surface Water (A1)	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14)	Secondar Secondar Drair Dry-5	y Indicators (minimum of two required to soli Cracks (B6) lage Patterns (B10) Season Water Table (C2)
Hydric soil criterion has _/ Previor vsed as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requested) Surface Water (A1) High Water Table (A2) Saturation (A3)	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	Secondar Secondar Drair Dry-S Cray	y Indicators (minimum of two required ice Soil Cracks (86) age Patterns (810) Season Water Table (C2) fish Burrows (C8)
Hydric soil criterion has _/ Previous vs*d as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requested by the second sec	MOT Bezn met. agriculture Thanged uired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro	Secondal Surfa Drair Dry-5 Cray ots (C3) Satu	y Indicators (minimum of two required to Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Hydric soil criterion has _/ Preving vsad as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requ _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3)	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4)	Secondar Suffa Drain Dry-S Cray ots (C3) Stunt	y Indicators (minimum of two required to Soil Cracks (B6) (B10) (B6) (B6) (B6) (B6) (B6) (B6) (B7) (B7) (B7) (B7) (B7) (B7) (B7) (B7
Hydric soil criterion has _/ Preving vsed as DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requ _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2)	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils	Secondar	y Indicators (minimum of two requirence Soil Cracks (B6) lage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Hydric soil criterion has _/ Preving vsid = 5 DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requested by the second sec	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7)	Secondar	y Indicators (minimum of two required to Soil Cracks (B6) (B10) (B6) (B6) (B6) (B6) (B6) (B6) (B7) (B7) (B7) (B7) (B7) (B7) (B7) (B7
Hydric soil criterion has _/ Preving vsd ss DROLOGY etland Hydrology Indicators: imary Indicators (minimum of one is requested by the second secon	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9)	Secondar	y Indicators (minimum of two requirence Soil Cracks (B6) lage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Hydric soil criterion has	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9)	Secondar	y Indicators (minimum of two requirence Soil Cracks (B6) lage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Hydric soil criterion has	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Secondar	y Indicators (minimum of two required toe Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Hydric soil criterion has _/ Preving vsid as DROLOGY Torona Hydrology Indicators: Timary Indicators (minimum of one is requested 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 (Incompared to the property of the p	wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Secondar	y Indicators (minimum of two required toe Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Hydric soil criterion has	wired: check all that apply) wired: check all that apply) water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondal Secondal Surfa Drair Dry-S Cray ots (C3) Satur Stunt (C6) Geor FAC	y Indicators (minimum of two required the Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) reation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) morphic Position (D2). Neutral Test (D5)
Hydric soil criterion has _/ Previns vsad as (DROLOGY etland Hydrology Indicators: fimary Indicators (minimum of one is required.) 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 (Inundation Visible on Aerial Imag	wired: check all that apply) wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondal Secondal Surfa Drair Dry-S Cray ots (C3) Satur Stunt (C6) Geor FAC	y Indicators (minimum of two required the Soil Cracks (B6) ange Patterns (B10) ange Patterns (C8) fish Burrows (C8) aration Visible on Aerial Imagery (C9) and or Stressed Plants (D1) anorphic Position (D2). Neutral Test (D5)
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Hydric soil criterion has	wired: check all that apply) wired: check all that apply) water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondal Secondal Surfa Drair Dry-S Cray ots (C3) Satur Stunt (C6) Geor FAC	y Indicators (minimum of two required the Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) reation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) morphic Position (D2). Neutral Test (D5)
Hydric soil criterion has	wired: check all that apply) wired: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondal Secondal Surfa Drair Dry-S Cray ots (C3) Satur Stunt (C6) Geor FAC	y Indicators (minimum of two require ace Soil Cracks (86) age Patterns (810) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) and or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Hydric soil criterion has	wired: check all that apply) wired: check all that apply) water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): Venonitoring well, aerial photos, previous inspection	Secondal Secondal Surfa Drair Dry-S Cray ots (C3) Satur Stunt (C6) Geor FAC	y Indicators (minimum of two require ace Soil Cracks (86) age Patterns (810) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) and or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)

Applicant/Owner: Hardin Wind Energy, LLC. (Investigator(s): Fift(s; S. Bender, M. R4 > Landform (hillslope, terrace, etc.): Slope (%): Lat: (10.637!15 Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this Are Vegetation , Soil , or Hydrology , na Are Vegetation , Soil , or Hydrology , na		Section, To	wnship, Ra Local relief	inge:
Investigator(s): First(s; S. Bender, M. R. 4 Y Landform (hillslope, terrace, etc.): Slope (%): Lat: Lat: Lot. Soil Map Unit Name: Lat: Lot. Soil		Section, To	wnship, Ra Local relief	inge:
Landform (hillslope, terrace, etc.): Slope (%): Lat: Ci(), C37! Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this are Vegetation Soil Are Vegetation Soil O Hydrology Signature Are Vegetation Soil O Hydrology Signature Signature Are Vegetation Soil So			Local relief	
Slope (%): Lat:(), (3) / (5) Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this site typical for this site.				
Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this Are Vegetation, Soil, or Hydrology sig			73.78	
Are climatic / hydrologic conditions on the site typical for this Are Vegetation, Soit, or Hydrology sig				
Are Vegetation, Soil, or Hydrology sig				
				_
Are Vegetation Soil or Hydrology pa				
SUMMARY OF FINDINGS – Attach site map s				
Hydrophytic Vegetation Present? Yes X No		•	5 po	
Hydric Soil Present? Yes X No		ls th	e Sampled	
Wetland Hydrology Present? Yes X No		with	in a Wetlar	nd? Yes X No
Remarks:				
All 3 criteria have been met. Area is a	wetland	ł.		
VEGETATION – Use scientific names of plants.				
· · · · · · · · · · · · · · · · · · ·	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1. Quereus bicalin	<u> </u>	Yes	FOCW	That Are OBL, FACW, or FAC: (A)
2 Papelos detados	10	No	Fec	Total Number of Dominant
3. Quevers palustrs			FOC W	Total Number of Dominant Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: ///// (A/B)
Sapling/Shrub Stratum (Plot size: 15')	50	= Total Cov	/er	Prevalence Index worksheet:
1. Norm - level Porwood	70	4.05	Fac	Total % Cover of:Multiply by:
2				OBL species
3				FACW species
4				FAC species 100 x3= 300
5				FACU species x 4 =
.		= Total Cov	/er	UPL species x 5 =
Herb Stratum (Plot size: 5')	20	Yes	I w	Column Totals: <u>200</u> (A) <u>506</u> (B)
1. Corex lupiling	40	145 Ye5	FOCH	Prevalence Index = B/A =
2. Pholoris orndu are			Ferw	Hydrophytic Vegetation Indicators:
3. Homp Sagbare	-		Fac	1 - Rapid Test for Hydrophytic Vegetation
5				× 2 - Dominance Test is >50%
				> 3 - Prevalence Index is ≤3.0
7				4 - Morphological Adaptations ¹ (Provide supporting
8.				data in Remarks or on a separate sheet)
9				Problematic Hydrophytic Vegetation¹ (Explain)
10				
Woody Vine Stratum (Plot size: 30')	70	= Total Cov	/er	¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
Remarks: (Include photo numbers here or on a separate sh		= Total Cov	/er	Present? Yes X No

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Total Catalogram	Remarks PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Tocation: Phydric Soil Indicators: Indicators for Histosol (A1) Sandy Gleyed Matrix (S4) Coast Pra Black Histo Epipedon (A2) Sandy Redox (S5) Dark Surfa Black Histo (A3) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (Ex; 2 cm Muck (A10) Depleted Bark Surface (F6) Thick Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Indicators of Mucky Mineral (S1) Redox Depressions (F8) Wetland hy unless dis Restrictive Layer (if observed): Type:	PL=Pore Lining, M=Matrix.
Type: C=Concentration, D=Deptetion, RM=Reduced Matrix, MS=Masked Sand Grains. Tocation: Plydric Soil Indicators:	³L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histors (A1) Histors (A2) Black Histic (A3) Hydrogen Sutified (A4) Hydrogen Sutified (A4) Loamy Mucky Mineral (F1) Thick Dark Surface (A11) Thick Dark Surface (A12) Bopleted Below Dark Surface (A11) Thick Dark Surface (A12) Bopleted Below Dark Surface (A11) Thick Dark Surface (A12) Bopleted Dark Surface (F6) Thick Dark Surface (A12) Bopleted Dark Surface (F7) Thick Dark Surface (A13) Feedox Depressions (F8) Wetland Hydric Soil Pre Wetland Hydric Soil Criterion has been met. Hydric Soil criterion has been met. Hydric Soil Criterion has been met. PyDROLOGY Wetland Hydrology Indicators: Primary Indicators (Minimum of one is required: check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Drift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Algal Mat or Crust (B4) Fresence of Reduced Iron (C4) Algal Mat or Crust (B4) Fresence of Reduced Iron (C4) Algal Mat or Crust (B4) Fresence of Reduced Iron (C4) Fresence of Reduce	² L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Black Camy Gleyed Matrix (S6) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Zerd Muck (A10) Zer	² L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Black Camy Gleyed Matrix (S6) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Zerd Muck (A10) Zer	² L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histosol (A2) Black Histic (A3) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Thick Dark Surface (A11) Thick Dark Surface (A12) Bandy Mucky Mineral (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Bopleted Dark Surface (F6) Thick Dark Surface (A12) Bopleted Dark Surface (F7) Thick Dark Surface (A13) Redox Depressions (F8) Wetland Hydric Soil Pre Hydric Soil Criterion has been met. Hydric Soil Criterion has been met. Hydric Soil Criterion has been met. Hydric Soil Criterion has been met. Hydric Soil Criterion has been met. Primary Indicators (Mainimum of one is required: check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Planta (B14) Drift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Algal Mat or Crust (B4) Iron-Mang Hydrogen Sulfide Odor (C1) Face of Reduced Iron (C4) Face of Reduced Iron (C4) Algal Mat or Crust (B4) Iron-Mang Presence of Reduced Iron (C4) Face of Reduced Iron (C4) Face of Reduced Iron (C4) Algal Mat or Crust (B4) Iron-Mang Face of Reduced Iron (C4) Face of Reduced Iron	² L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histosol (A2) Histosol (A2) Black Histic (A3) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Pepleted Below Dark Surface (A11) For Mucky Peat or Peat (S3) Redox Depressions (F8) Hydric Soil Pre Remarks: Hydric soil criterion has been met. Hydric Soil Pre Remarks: Hydric soil criterion has been met. Hydric Soil Pre Remarks: Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Drift Deposits (B2) Drift Deposits (B3) Agait for Crust (B4) I Recent Iron Reduction in Titled Soils (C6) For Company Present? Persent? Yes No Depth (inches): For June Remarks: For June Hydrology Present? For Sall Micky Peat or Peat (B8) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	² L=Pore Lining, M=Matrix.
Hydric Soil Indicators: Histosol (A1) Histosol (A2) Histosol (A2) Black Histic (A3) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Mucky Mineral (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Pepleted Below Dark Surface (A11) For Mucky Peat or Peat (S3) Redox Depressions (F8) Hydric Soil Pre Remarks: Hydric soil criterion has been met. Hydric Soil Pre Remarks: Hydric soil criterion has been met. Hydric Soil Pre Remarks: Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Drift Deposits (B2) Drift Deposits (B3) Agait for Crust (B4) I Recent Iron Reduction in Titled Soils (C6) For Company Present? Persent? Yes No Depth (inches): For June Remarks: For June Hydrology Present? For Sall Micky Peat or Peat (B8) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	² L=Pore Lining, M=Matrix.
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Hydric Soil Indicators: Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Black Camy Gleyed Matrix (S6) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Zerd Muck (A10) Zer	L=Pore Lining, M=Matrix.
Histosol (A1)	- Dealelannada (b4-ta Ontta)
Histic Epipedon (A2) Black Histic (A3) Black Histic (A4) Black Histic (A5) Black His	r Problematic mydric Solis":
Black Histic (A3) Stripped Matrix (S6) Iron-Mang Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (Exp. 2 cm Muck (A10) X Depleted Matrix (F3) A Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Indicators of Wetland Hydrology Indicators of Wetland Hydrology Indicators of Wetland Hydrology Indicators: Type:	airie Redox (A16)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shall Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (Ext. 2 cm Muck (A10) Eopleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Wetland hy unless dis Restrictive Layer (if observed): Type: Deplit (inches): Hydric Soil criterion has been met. Wetland Hydrology Indicators: Hydric Soil criterion has been met. Wetland Hydrology Indicators: Hydric Soil criterion has been met. YDROLOGY Wetland Hydrology Indicators: Hydric Soil criterion has been met. YDROLOGY Wetland Hydrology Indicators: Hydric Soil criterion has been met. YDROLOGY Wetland Hydrology Indicators: Hydric Soil criterion has been met. YDROLOGY Wetland Hydrology Indicators: Hydric Soil Presenter (A1) Secondary Indicators (minimum of one is required: check all that apply) Your Surface Water (A1) Aquatic Fauna (B13) Secondary Indicators (minimum of one is required: check all that apply) Your Surface Water (A1) Hydrogen Sulfide Odor (C1) Crayfist Sediment Deposits (B1) Hydrogen Sulfide Odor (C1) Crayfist Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation (C4) Sediment Deposits (B3) Presence of Reduced Iron (C4) Stunted Presents (C7) Separate (C7) Fractorial Integery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Furface Water Present? Yes No Depth (inches): Jim Metland Hydrology Presidudes capillary fringe) Prescribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ace (S7)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (Exp. 2 cm Muck (A10) X Depleted Matrix (F3) X Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) * Indicators of I	ganese Masses (F12)
	llow Dark Surface (TF12)
Completed Below Dark Surface (A11)	ptain in Remarks)
Thick Dark Surface (A12) Depleted Dark Surface (F7)	
Sandy Mucky Mineral (S1) Redox Depressions (F8) unless districtive Layer (if observed): Type:	Character Street, and the stre
### Soft Mucky Peat or Peat (S3) Restrictive Layer (if observed): Type:	hydrophytic vegetation and
Restrictive Layer (if observed): Type:	ydrology must be present, sturbed or problematic.
Type:	sturbed or problematic.
Population in the property of	
Again to Crust (B4) Portion Deposits (B3) Algal Mat or Crust (B4) Algal Mat or Crust (B5) Iron Deposits (B5) Iron Muck Surface (C7) FAC-Net (Explain in Remarks) Iron Deposits (B5) Iron Muck Surface (C7) FAC-Net (Explain in Remarks) Iron Deposits (B5) Iron Muck Surface (C7) Iron	esent? Yes $\overline{\mathrm{X}}$ No $\underline{\hspace{0.5cm}}$
Hydric soil criterion has been met. YDROLOGY Wetland Hydrology Indicators: **Primary Indicators (minimum of one is required: check all that apply) **Surface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Fauna (B13) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Furface Water Present? Ves X No Depth (inches): Facunt on Deposits (B2) Depth (inches): Facunt on Review Inches (B2) Wetland Hydrology Procludes capillary fringe) Fescribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Primary Indicators (minimum of one is required: check all that apply) Surface Water (A1) High Water Table (A2) 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) Surface Water Table (A2) No Depth (inches): Seturation Present? Yes X No Depth (inches): Seturation Present? Yes X No Depth (inches): Seturation Present Imagery (B7) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Primary Indicators (minimum of one is required: check all that apply) Surface Water (A1) High Water Table (A2) Water-Stained Leaves (B9) Surface High Water Table (A2) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Water Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Secondary I Water-Stained Leaves (B9) Surface Surface (B9) Surface Surface (B9) Surface Surface (B9) Surface Surface (B8) Surface (B8) Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes Yes No Depth (inches): Saturation Present? Yes Yes Yes Yes Yes Yes Yes Ye	
X Surface Water (A1) Water-Stained Leaves (B9) Surface High Water Table (A2) Aquatic Fauna (B13) X Drainag X Saturation (A3) True Aquatic Plants (B14) Dry-Sea Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) X Geomore Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Ne Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Ves No Depth (inches): Very Watland Hydrology Proceeds applies of the processor of the pr	Indicators (minimum of two require
High Water Table (A2) Aquatic Fauna (B13) True Aquatic Plants (B14) Dry-Sea 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 Table Present? Yes X No Depth (inches): Saturation Present? Yes X No Depth (inches): Yes X No Depth (inches):	
X Saturation (A3)	· /
Water Marks (B1)	
Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Table Present? Yes No Depth (inches): Destrict in Muck Surface (C7) FAC-Net (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Destrict in Muck Surface (C7) FAC-Net (Explain in Remarks) Depth (inches): Depth	ason Water Table (C2)
Drift Deposits (B3)	h Burrows (C8)
Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) FAC-New Concave Surface (B8) Other (Explain in Remarks) Factorial Imagery (B7) Other (Explain in Remarks) Factorial I	tion Visible on Aerial Imagery (C9)
Iron Deposits (B5)	d or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: surface Water Present? Yes No Depth (inches): // // // // // // // // // // // /	
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: surface Water Present? Yes X No Depth (inches): 10 in Vater Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Water Table Present? Yes X No Depth (inches): Yes Yes Yes X No Depth (inches): Yes Yes X No Yes	eutrai Test (D5)
ield Observations: Surface Water Present? Yes X No Depth (inches): 10 in Vater Table Present? Yes No Depth (inches): Wetland Hydrology Present	
Surface Water Present? Yes X No Depth (inches): 10 in Vater Table Present? Yes No Depth (inches): Wetland Hydrology Present includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Vater Table Present? Yes No Depth (inches): Wetland Hydrology Princludes capillary fringe) Wetland Hydrology Princludes capillary fringe) Wescribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Saturation Present? Yes X No Depth (inches): 6 in Watland Hydrology Princludes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
	resent? Yes X No
Remarks:	
Wetland hydrology criterion has been met.	
chand nyarology effection has been met.	

I Pitte C Rander	(017		State: OH Sampling Point: UPL-MR
vestigator(s): J, Pitts; S. Bender				
andform (hillstope, terrace, etc.): #:11 Godu				
				Datum: WGS84
oil Map Unit Name:				NWI classification:
re climatic / hydrologic conditions on the site typical for thi	is time of ye	ar? Yes	No _	(If no, explain in Remarks.)
re Vegetation, Soil, or Hydrology	significantly	disturbed?	Are	"Normal Circumstances" present? Yes No
re Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If n	eeded, explain any answers in Remarks.)
				ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	10 ×	pa Coaste		
Hydric Soil Present? Yes N		2	ne Sampled	5 October 2000 (Control of Control of Contro
Wetland Hydrology Present? Yes N		with	iin a Wetla	nd? Yes NoX
Remarks:	22	8 - 6 -		
of 3 criteria have been met. Area	is not a	wetland		80
			s bed	esti filippo per en entre e grande
EGETATION – Use scientific names of plants				
Tree Stratum (Plot size: 30')	Absolute	Dominant		Dominance Test worksheet:
				Number of Dominant Species
<i>M</i> A	_			That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant
3.				Species Across All Strata: (B)
1				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size: 15')		= Total Cov	ver	Prevalence Index worksheet:
1. N/A				Total % Cover of: Multiply by:
2.				OBL species
3.				FACW species
. 100 600 0 00 0 000 000 000 000				FAC species \mathcal{Q} $\times 3 = \mathcal{Q}$
				FACU species 100 x4= 400
		= Total Cov		UPL species
Herb Stratum (Plot size: 5')				Column Totals: 100 (A) 100 (B)
Lalium prenne				11.40
Broad Leand English Plattal				Prevalence Index = B/A =
Runex Evis pris	- 10	NO	Fuel	Hydrophytic Vegetation Indicators:
. Growt Ragneed	10	NO	FOCU	1 - Rapid Test for Hydrophytic Vegetation
•				2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0¹
				4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
J				Problematic Hydrophytic Vegetation¹ (Explain)
	100			¹ Indicators of hydric soil and wetland hydrology must
	100	= Total Cov	/er	be present, unless disturbed or problematic.
0	ASSESSMENT OF THE PARTY OF THE			
0				11.1
0				Hydrophytic Vegetation
0	-			Hydrophytic Vegetation Present? Yes No

Profile Desc	ription: (Describe	to the depth	needed to docur	nent the ir	dicator o	or confirm	the absence o	of indicators.)
Depth	Matrix	:		x Features				·
(inches)	Color (moist)	%		%		Loc²	Texture	Remarks
0-18	10424/4	100					clerky.	
		- ·						
	-						-	
								
_								
-				· -				
¹Type: C=C	oncentration, D=Dep	- ——— — Netion RM≅R	educed Matrix M	S=Masked	Sand Gra	ins	2l ocation:	PL=Pore Lining, M=Matrix.
Hydric Soil		ACROIT, INVI-IV	eddeed Matrix, Mi	J-Wasked	Cana Cic	u)ra,		or Problematic Hydric Soils ³ :
Histosol			Sandy (Sleyed Mat	rix (S4)		Coast P	Prairie Redox (A16)
_	oipedon (A2)			Redox (S5)				ırface (S7)
Black Hi			Stripped	Matrix (Se	3)		Iron-Ma	nganese Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mine	eral (F1)		Very Sh	nallow Dark Surface (TF12)
_	d Layers (A5)			Gleyed Ma			Other (E	Explain in Remarks)
_	ack (A10)	****		d Matrix (F	-			
	d Below Dark Surfac	e (A11)		Dark Surfac			3Indiagtors	of hydrophytic vegetation and
	ark Surface (A12) Nucky Mineral (S1)			d Dark Sur Depression				hydrology must be present,
	icky Peat or Peat (S	3)	1100001	ocpi cooloii	3 (1 0)			disturbed or problematic.
	Layer (if observed)	•					1	
Type:	- ,							
	ches):		_				Hydric Soil F	Present? Yes No
Remarks:								
-	ic soil criterion	n nas <u>///</u>	<u>veevi</u> 11	iet.		***		
HYDROLO							**************************************	
	drology Indicators							
	cators (minimum of o	one is require						y Indicators (minimum of two required)
	Water (A1)		Water-Sta					ace Soil Cracks (B6)
	ater Table (A2)		Aquatic Fa					nage Patterns (B10)
Saturatio	• •		True Aqua		•			Geason Water Table (C2) fish Burrows (C8)
_	larks (B1)		Hydrogen			na Poots A		ration Visible on Aerial Imagery (C9)
	nt Deposits (B2) posits (B3)		Oxidized F Presence					ted or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro		-			morphic Position (D2)
	osits (B5)		Thin Muck			, 00,00		Neutral Test (D5)
	on Visible on Aerial	lmagery (B7)	Gauge or	•				
	Vegetated Concav		— •		•			
Field Obser	vations:						<u> </u>	
Surface Water	er Present?	'es No	Depth (in	ches):		_		
Water Table			Depth (in					
Saturation Po			Depth (in				and Hydrology	Present? Yes No X
(includes cap	oillary fringe)							
	corded Data (stream	n gauge, moni	toring well, aerial	ohotos, pre	vious ins	pections),	if available:	
Remarks:	N/A							
	tland hydrolog	v criterio	n has watte	cu met				
***	dana nyaroto	57 CINCIIO	II IIdo IVan V	<u>-1</u> 111¢t.				

Project/Site: 339845: Hardin Wind Energy Pr	roject	City/C	ounty	. Hardii	n County	Sampling Date:	6/201
Applicant/Owner: Hardin Wind Energy, LLC.	(Invene	rgy)			State: OH	Sampling Point:	W-MR
Investigator(s): _J, Pitts; S. Bender							
Landform (hillslope, terrace, etc.): Decare 55 and						tanle	ي لاسو
Slope (%): Lat: 40, (3585		Lona:	. .	83.76	SIX	Datum: WG	S84
Soil Map Unit Name:					NWI classific		
Are climatic / hydrologic conditions on the site typical for thi							
Are Vegetation, Soil, or Hydrology						_	Y No
							Z NO
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site map					eded, explain any answe		eatures, et
Hydrophytic Vegetation Present? Yes X	lo						
Hydric Soil Present? Yes X	lo			e Sampled			
Wetland Hydrology Present? Yes X N	lo		with	in a Wetlan	nd? Yes X	No	
Remarks: All 3 criteria have been met. Area is a	a wetlan	d.		HINK	bin of Ron	n inpost	4 week
VEGETATION – Use scientific names of plants							
Tree Stratum (Plot size: 30')	Absolute % Cover			Indicator	Dominance Test work		
1. N/A					Number of Dominant Sp That Are OBL, FACW, of	pecies '7 or FAC: '7	> (A)
2						_	
3.					Total Number of Domin Species Across All Stra	ant 7 ta:	S(B)
4					•		
5					Percent of Dominant Sp That Are OBL, FACW, o	recies or FAC: 101	0 % (A/B
15'		= Tota	al Cov	/er			
Sapling/Shrub Stratum (Plot size: 15')					Prevalence Index work Total % Cover of:		du bur
1. N/H					OBL species	Multip	
2					FACW species 3	7 x2=	(e/)
3. 4.					FAC species 0	×3=	0
5						x 4 =	
		= Tota	al Cov	/er	· · · · · · · · · · · · · · · · · · ·	x5=	U
Herb Stratum (Plot size: 5')					Column Totals: 75		
1. Alisma plantago - Aqualia	_ 20_	Ye	5	OBL			
2. Slunden Rush				Facw	Prevalence Index		190
3. Sersicara by desposen	<u> 20 </u>	- Y -e	÷	tvew	Hydrophytic Vegetatio		
4. Eleachors Obtuga		ye.		OBL	1 - Rapid Test for H		tation
5. Typha on just: Pola		_ √(<u> </u>	OBL			
6					4 - Morphological A		vida supportin
7						s or on a separate	
8					Problematic Hydro	phytic Vegetation	¹ (Explain)
9							
Woody Vine Stratum (Plot size: 30')	75	= Tota	al Cov	/er	¹ Indicators of hydric soil be present, unless distu		
1					!!	++	
2.					Hydrophytic Vegetation	37	
		= Tota	al Cov	/er	Present? Yes	s_X No_	
Remarks: (Include photo numbers here or on a separate	sheet.)						
Hydrophytic vegetation criterion has		ıet.					

	cription: (Descril					or confirm	n the absence o	f indicators.)
Depth (inches)	Matrix Color (moist)	<u>%</u>	Red Color (moist)	ox Feature %	es Type ¹	Loc²	Texture	Remarks
(inches)								Remarks
0-16	10YR4/1	<u> 98</u> _	IOYR SIG	<u>-2</u> _	<u>Lu</u>	<u></u>	tlay -	
								17 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -
					- 			
¹Type: C=C	oncentration, D≈D	— ——— — epletion. RM≃R	educed Matrix. M	– – – – IS=Maske	d Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil						•		or Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast Pr	rairie Redox (A16)
_	pipedon (A2)			Redox (S				rface (S7)
	Black Histic (A3) Stripped Matrix (S6)				Iron-Mar	nganese Masses (F12)		
Hydroge	Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)				Very Sha	allow Dark Surface (TF12)		
Stratifie	Stratified Layers (A5) Loamy Gleyed Matrix (F2)						Other (E	xplain in Remarks)
	uck (A10)		<u></u> ∠ Deplet					
	d Below Dark Surf	ace (A11)		Dark Surf			3. .	
	ark Surface (A12)				urface (F7	•		f hydrophytic vegetation and
	Nucky Mineral (S1		Redox	Depression	ons (F8)			hydrology must be present,
	ucky Peat or Peat						uniess d	isturbed or problematic.
	Layer (if observe							
Type:							Hydric Soil P	resent? Yes X No
Depth (in	ches):		-				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
					wrw.wr			
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary India	cators (minimum o	f one is required	d: check all that a	pply)				/ Indicators (minimum of two required)
X Surface	Water (A1)		Water-Sta	ained Leav	/es (B9)		Surface	ce Soil Cracks (B6)
High Wa	ater Table (A2)			auna (B13			<u> </u>	age Patterns (B10)
<u>⊀</u> ` Saturatio	on (A3)		$\underline{\mathcal{X}}$ True Aqu	atic Plants	(B14)		Dry-S	eason Water Table (C2)
Water M	larks (B1)		Hydroger	Sulfide C	dor (C1)		Crayfi	sh Burrows (C8)
	nt Deposits (B2)		Oxidized	Rhizosphe	eres on Liv	ing Roots	(C3) Satura	ation Visible on Aerial Imagery (C9)
	posits (B3)		Presence	of Reduc	ed Iron (C4	1)	∠ Stunte	ed or Stressed Plants (D1)
🔀 Algal Ma	at or Crust (B4)		Recent Ir	on Reduct	ion in Tille	d Soils (C6		orphic Position (D2)
	oosits (B5)		Thin Muc	k Surface	(C7)		<u> </u>	Neutral Test (D5)
	on Visible on Aería			Well Date				
	y Vegetated Conca	ive Surface (B8	Other (Ex	plain in Re	emarks)			
Field Obser	vations:	A						
Surface Wat	er Present?		Depth (in					
Water Table	Present?	Yes No	Depth (in	nches):		_		
Saturation P		Yes No	Depth (in	nches):	10 m	Wetla	and Hydrology	Present? Yes X No
(includes car Describe Re	corded Data (strea					pections).	if available:	
	N/A					,,		
Remarks:			_					
We	tland hydrolo	ogy criterio	n has been r	net.				

pplicant/Owner: Hardin Wind Energy, LLC	. (Invene	rgy)		State: OH	Sampling Point: UPL- MI
nvestigator(s): J, Pitts; S. Bender				nge:	
andform (hillslope, terrace, etc.): h:11 とっしょ					
lope (%): Lat:LO.(3581]		Long: 2	3.765	23	Datum: WGS84
oil Map Unit Name:					
re climatic / hydrologic conditions on the site typical for the					
re Vegetation, Soil, or Hydrology	-				
re Vegetation, Soil, or Hydrology				eded, explain any answe	
UMMARY OF FINDINGS – Attach site map	•		•		
Hydrophytic Vegetation Present? Yes	No				. , ,
Hydric Soil Present? Yes	No ×		e Sampled		v
Wetland Hydrology Present? Yes	No	with		id? Yes	
Remarks: of 3 criteria have been met. Are: remarks. ZEGETATION – Use scientific names of plants		wetland	. App	ak. Bin vo	m in lest Kweek
,	Absolute	Dominant	Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant S	
1. N/K	-			That Are OBL, FACW,	Dr FAC: (A)
2.				Total Number of Domin	. ,
				Species Across All Stra	ta: <u>~</u> (B)
				Percent of Dominant Sp	pecies
		= Total Cov		That Are OBL, FACW,	or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: 15')				Prevalence Index wor	ksheet:
<i>N/A</i>				Total % Cover of:	
				OBL species	
3.				FACW species0	
				FAC species	X3= 0
				FACU species 700	
ferb Stratum (Plot size: 5')		= Total Cov	/er		$0 (A) \frac{260}{} (B)$
Poa protença	20	Yes	Fock		
Rumes Crispus	10	NO	FacV	Prevalence Index	= B/A =
	<u> 30</u>	4.65	Foll	Hydrophytic Vegetation	on Indicators:
· lolium premme		$N_{\mathcal{O}}$	FOLU	1 - Rapid Test for H	lydrophytic Vegetation
Flex boune	>	- 0			
. + red Gay e	<u> </u>	NO	FOLU	2 - Dominance Tes	
golden vergwar +		NØ	Face	3 - Prevalence Inde	ex is ≤3.0¹
golden vergwar +		N 0	Fact	3 - Prevalence Inde	ex is ≤3.0¹ \daptations¹ (Provide supporting
golden vergwar +		N 0	Fact	3 - Prevalence Inde 4 - Morphological A data in Remarks	ex is ≤3.0¹ .daptations¹ (Provide supporting s or on a separate sheet)
golden vag war +		N 0	<u> </u>	3 - Prevalence Inde 4 - Morphological A data in Remarks	ex is ≤3.0¹ \daptations¹ (Provide supporting
golden vergwar +		N 0		3 - Prevalence Inde 4 - Morphological A data in Remarks Problematic Hydrop	ex is ≤3.0 ¹ Adaptations¹ (Provide supporting s or on a separate sheet) ohytic Vegetation¹ (Explain) I and wetland hydrology must
John Stratum (Plot size: 30')	70	N 0		3 - Prevalence Inde 4 - Morphological A data in Remarks Problematic Hydrol Indicators of hydric soi be present, unless dista	ex is ≤3.0 ¹ Adaptations¹ (Provide supporting s or on a separate sheet) ohytic Vegetation¹ (Explain) I and wetland hydrology must
1. Intim premue 4. Item boune 5. golden reguer + 6 7 8 9 10 Noody Vine Stratum (Plot size: 30') 1	70	N 0		3 - Prevalence Inde 4 - Morphological Adata in Remarks Problematic Hydrop Indicators of hydric soint be present, unless distured. Hydrophytic	ex is ≤3.0 ¹ Adaptations¹ (Provide supporting s or on a separate sheet) ohytic Vegetation¹ (Explain) I and wetland hydrology must

___ Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) ___ Saturation Visible on Aerial Imagery (C9) __ Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) ___ Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) _ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ FAC-Neutral Test (D5) _ Iron Deposits (B5) ___ Gauge or Well Data (D9) ___ Inundation Visible on Aerial Imagery (87) _ Sparsely Vegetated Concave Surface (B8) ___ Other (Explain in Remarks) Field Observations: Yes _____ No X Depth (inches); ___ Surface Water Present? Yes No > Depth (inches): Water Table Present? Wetland Hydrology Present? Yes ____ No 🟃 Saturation Present? Yes ____ No _x Depth (inches): ___ (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Wetland hydrology criterion has Not been met.

Appendix D Ohio EPA ORAM Data Forms

Wetland W- MICH.

Site:	Ka - 9	Hardy County Rater(s): M. K.	97 Date: 6 / 19/ 19
Q	0	Metric 1. Wetland Area (size).	Circle: PEM PSS PFO
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts)	Circle: Isolated Adjacent Abutting
		10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)	# of flags:
	<u> </u>	<0.1 acres (0.04ha) (0 pts)	Continue offsite? <u>NO</u>
	1	Metric 2. Upland buffers and su	rrounding land use.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. WIDE. Buffers average 50m (164ft) or more around wetlan MEDIUM. Buffers average 25m to <50m (82 to <164ft) aro NARROW. Buffers average 10m to <25m (32ft to <82ft) at YERY NARROW. Buffers average <10m (<32ft) around we 2b. Intensity of surrounding land use. Select one or double check at YERY LOW. 2nd growth or older forest, prairie, savannah, LOW. Old field (>10 years), shrubland, young second grow MODERATELY HIGH. Residential, fenced pasture, park, of HIGH. Urban, industriat, open pasture, row cropping, minim	d perimeter (7) und wetland perimeter (4) round wetland perimeter (1) etland perimeter (0) nd average. wildlife area. etc. (7) rth forest. (5) onservation tillage. new fallow field. (3)
12	13	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest). complex (1) Part of riparian or upland corridor (1) 3d. Duration inundation/saturation. Score one or dbl check.
		3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. Score one or double	Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) check and average.
		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) Check all disturbances observed it le ditch tile dike weir stormwater input	
7	20	Metric 4. Habitat Alteration and	Development.
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average.	
,	Z D	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Check all disturbances obsermowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging X farming nutrient enrichment

Site:	RA- ((Howard Courty R	later(s): M, R.	7 Y	Date: 6 / 18/19
	-	7			
	120				
		J			
-	subtotal this pa	gge 1			
0	0	Metric 5. Special We	etiands.		
max 10 pts.	subtotal	Check all that apply and score as indicated.			
		Bog (10)			
		Fen (10)			
		Old growth forest (10) Mature forested wetland (5)			
		Lake Erie coastal/tributary wetland	d-unrestricted hydrology (1	0)	
		Lake Erie coastal/tributary wetland			
		Lake Plain Sand Prairies (Oak Op	enings) (10)		
		Relict Wet Praires (10)			
		Known occurrence state/federal th	-		
		Significant migratory songbird/wat Category 1 Wetland. See Question	= :		
	T]	on 1 Qualitative (Vating (-10	,	
	120	Metric 6. Plant comr	nunities, inte	erspersion, micro	otopography.
max 20 pls.	subtotal	6a. Wetland Vegetation Communities.	Vegetation Community	_	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	71 acres) contiguous area
		Aquatic bed	1	Present and either comprises sma	all part of wetland's
		Emergent		vegetation and is of moderate q	uality, or comprises a
		Shrub		significant part but is of low qua	•
		Forest	2	Present and either comprises sign	*
		Mudflats Open water		vegetation and is of moderate q part and is of high quality	uality of comprises a small
		Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.			
		High (5)	Narrative Description		
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predoming disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	
		Low (1)	02	although nonnative and/or distur	=
		None (0)		can also be present, and specie	s diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generallyw	lo presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage Extensive >75% cover (-5)	high	A predominance of native species and/or disturbance tolerant nativ	• •
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	• • • • • • • • • • • • • • • • • • • •
		Sparse 5-25% cover (-1)		the presence of rare, threatened	•
		Nearly absent <5% cover (0)			
		Absent (1)	Mudflat and Open Wat	·	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale. Vegetated hummucks/tussucks	1 2	Low 0.1 to <1ha (0.247 to 2.47 ac Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	<u>acres)</u>
		Standing dead >25cm (10in) dbh		13	
		Amphibian breeding pools	Microtopography Cove	er Scale	<u> </u>
			0	Absent	
			1	Present very small amounts or if n	nore common
			2	of marginal quality Present in moderate amounts, but	not of highest
				quality or in small amounts of his	
			3	Present in moderate or greater an	
	-			and of highest quality	

Site:	LY-L		Rater(s): 7. Radio	ed M. Ray	Date: 6/14/19
2	2	Metric 1. Wetland	Area (size).	Circle: (PEM) PSS	PFO
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.	2ha) (5 pts)	Circle: Isolated	Adjacent Abutting
		10 to <25 acres (4 to <10.1ha 3 to <10 acres (1.2 to <4ha) (X 0.3 to <3 acres (0.12 to <1.2h 0.1 to <0.3 acres (0.04 to <0.	3 pts) na) (2pts)	# of flags: 12	
	Т-	<0.1 acres (0.04ha) (0 pts)	izila, (i pt)	Continue offsite? <u>\lambda</u>	Jo
	3	Metric 2. Upland b	ouffers and surro	ounding land u	se.
max 14 pts.	subtotal	MEDIUM. Buffers average 2: NARROW. Buffers average	(164ft) or more around wetland per 5m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around erage <10m (<32ft) around wetland	imeter (7) vetland perimeter (4) I wetland perimeter (1) I perimeter (0)	RUB Pro
		VERY LOW. 2nd growth or or LOW. Old field (>10 years), s #fODERATELY HIGH, Resid	lder forest, prairie, savannah, wildli shrubland, young second growth fo ential, fenced pasture, park, conse n pasture, row cropping, mining, co	fe area, etc. (7) rest. (5) rvation tillage, new fallow field.	(3)
21.	24	Metric 3. Hydroloς			
max 30 pts.	subtotal	3a. Sources of Water. Score all that all High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake 3c. Maximum water depth. Select only	water (3) or stream) (5) 3d	Connectivity. Score all that a 100 year floodplain (1) Between stream/lake at Part of wetland/upland Part of riparian or uplant Duration inundation/saturation	nd other human use (1) (e.g. forest). complex (1) nd corridor (1) on. Score one or dbl check.
		>0.7 (27.6in) (3) >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2 <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic	2)	Regularly inundated/sa Seasonally inundated (Seasonally saturated in	turated (3) 2)
		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch X tile dike weir stormwater input		water)
13	37	 Metric 4. Habitat <i>A</i>	Alteration and De	velopment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one Mone or none apparent (4)	or double check and average.	•	
		4c. Habitat alteration. Score one or do			
,	37	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling removal herbaceous/aquatic bed sedimentation dredging √ farming nutrient enrichment	j removal

Site:	Hove	In Wind	Rater(s): ≁.	Ryy	Date: 6/19/19
		1		,	
	5 /				
	L	<u></u>			
•	subtotal this pa]			
0	0	Metric 5. Special W	letlands.		
max 10 pts.	subtotal	Check all that apply and score as indicate			
		Bog (10)			
		Fen (10)			
~		Old growth forest (10)			
		Mature forested wetland (5)			
		Lake Erie coastal/tributary wetla	and-unrestricted hydrolo	gy (10)	
		Lake Erie coastal/tributary wetla		(5)	
		Lake Plain Sand Prairies (Oak 0	Openings) (10)		
		Relict Wet Praires (10) Known occurrence state/federal			
		Significant migratory songbird/w	•	. , ,	
		Category 1 Wetland. See Ques			
]	mon r addition roung	, (,	
q	4/6	Metric 6. Plant com	munities, i	nterspersion, mic	rotopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	· ·	nunity Cover Scale	
max 20 pta.	Jupiolai	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	.2471 acres) contiguous area
		l Aquatic bed	1	Present and either comprises s	***
		1 Emergent		vegetation and is of moderate	•
		2 Shrub		significant part but is of low q	uality
		f Forest	2	Present and either comprises s	ignificant part of wetland's
		<u>\(\)</u> Mudflats		vegetation and is of moderate	e quality or comprises a small
		/ Open water		part and is of high quality	· · · · · · · · · · · · · · · · · · ·
		Other	3	Present and comprises significa	·
		6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	ity
		Select only one.	Manustina Dagania	tion of Monatotion Overlity	
		High (5) Moderately high(4)	low	tion of Vegetation Quality Low spp diversity and/or predoi	minance of nonnative or
		Moderate (3)	IOW	disturbance tolerant native sp	
		Moderately low (2)	mod	Native spp are dominant compe	
		Low (1)		although nonnative and/or dis	
		None (0)		can also be present, and spe	cies diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generall	yw/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered sp	р
		or deduct points for coverage	high	A predominance of native spec	, ,
		Extensive >75% cover (-5)		and/or disturbance tolerant na	
		Moderate 25-75% cover (-3)		absent and high spp diversity	•
		Sparse 5-25% cover (-1)		the presence of rare, threater	ned. or endangered spp
		Nearly absent <5% cover (0) Absent (1)	Mudflat and Onon	Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	acres)
		O Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.	
		Coarse woody debris >15cm (6i	n) 3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) db	h		
		Z Amphibian breeding pools	Microtopography	Cover Scale	
			0	Absent	
			1	Present very small amounts or	if more common
				of marginal quality	hous mak as bindered
			2	Present in moderate amounts, quality or in small amounts of	•
			3	Present in moderate or greater	
			-	and of highest quality	****
			-	 	

Site:	Hàn	My Addendum 2 Rater(s): SKB	, м. R. чу Date: 6/19/19
2	2	Metric 1. Wetland Area (size).	Circle: PEM PSS PFO
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts)	Circle: Isolated Adjacent Abutting
		10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 3 to <3 acres (0.12 to <1.2ha) (2pts)	# of flags:
	7	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	Continue offsite? <u>Y@</u>
1	<u> </u>	Metric 2. Upland buffers and su	rrounding land use.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign scor WIDE. Buffers average 50m (164ft) or more around wetlan	
	0	MEDIUM. Buffers average 25m to <50m (82 to <164ft) aro NARROW. Buffers average 10m to <25m (32ft to <82ft) a VERY NARROW. Buffers average <10m (<32ft) around we	ound wetland perimeter (4) round wetland perimeter (1)
		2b. Intensity of surrounding land use. Select one or double check a VERY LOW. 2nd growth or older forest, prairie, savannah,	
	1	LOW. Old field (>10 years), shrubland, young second grow	vth forest. (5)
		MODERATELY HIGH. Residential, fenced pasture, park, o HIGH. Urban, industrial, open pasture, row cropping, minir	
12	17.		
max 30 pts.	subtotal	Metric 3. Hydrology. 3a. Sources of Water. Score all that apply.	3b. Connectivity. Score all that apply.
		High pH groundwater (5)	100 year floodplain (1)
	(Other groundwater (3) Precipitation (1)	Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1)
	•	Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)	Part of riparian or upland corridor (1) 3d. Duration inundation/saturation. Score one or dbl check.
		3c. Maximum water depth. Select only one and assign score.	Semi- to permanently inundated/saturated (4)
(9)	,	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)	Regularly inundated/saturated (3) Seasonally inundated (2)
_		3e. Modifications to natural hydrologic regime. Score one or double	Seasonally saturated in upper 30cm (12in) (1)
		None or none apparent (12) Check all disturbances obs	
		S Recovered (7) ditch Recovering (3) tile	point source (nonstormwater)
		Recent or no recovery (1)	filling/grading road bed/RR track
		weir	dredging
		stormwater input	other
7.5	23,5	Metric 4. Habitat Alteration and	Development.
max 20 pts.	subtotal	 Substrate disturbance. Score one or double check and average. 	
		None or none apparent (4) Recovered (3)	
	2.	Recovering (2) Recent or no recovery (1)	
		4b. Habitat development. Select only one and assign score.	
		Excellent (7) Very good (6)	
		Good (5) Moderately good (4)	
		∠ Fair (3)	
		Poor to fair (2)	
		4c. Habitat alteration. Score one or double check and average.	
		None or none apparent (9) Check all disturbances observed (6) mowing	erved shrub/sapling removal
	,	Recovering (3) grazing	herbaceous/aquatic bed removal
Ι		Recent or no recovery (1) clearcutting selective cutting	sedimentation dredging
	23,5	woody debris removal toxic pollutants	farming nutrient enrichment
L su	ubtotal this pag	- II - I	> Vitation cinorine

Site: ├√	avdin	Addendum	2 R	ater(s):	SKB		Date:	0	19/1	9
su	23,5							'	·	
$\overline{}$	2	/letric 5. Spe	cial We	tlands	5.					
max 10 pts.		heck all that apply and sco								
	0	Bog (10) Fen (10) Old growth forest (Mature forested we Lake Erie coastal/t Lake Erie coastal/t Lake Plain Sand Pi Relict Wet Praires Known occurrence Significant migrator Category 1 Wetlan	etland (5) ributary wetland ributary wetland rairies (Oak Op (10) state/federal th ry songbird/wat	d-restricted hy enings) (10) areatened or e er fowl habita	rdrology (5) endangered s t or usage (1	pecies (10) 0}				
	24,5 N					erspersion, micro	otopog	arar	ohy.	
max 20 pts.		a. Wetland Vegetation Con			•	y Cover Scale				
	Sc	cor <u>e all</u> present using 0 to 3	3 scale.		0	Absent or comprises <0.1ha (0.24	71 acres) co	ntiguou	ıs area	_
		C Aquatic bed			1	Present and either comprises sma	all part of wet	land's		
		\ Emergent				vegetation and is of moderate q	· -	prises	а	
	2	\ Shrub			2	significant part but is of low qua		fuction		—
		Forest O Mudflats			2	Present and either comprises sign vegetation and is of moderate q	· ·			
		Open water				part and is of high quality	dailty or com	prises	a Siliali	
		0 Other			3	Present and comprises significant	part or more	e of we	etland's	—
	6t	o. horizontal (plan view) Int	terspersion.		Ť	vegetation and is of high quality				
		elect only one.				, , , , , , , , , , , , , , , , , , , ,				_
		High (5)		Narrative	Description	of Vegetation Quality				
		Moderately high(4)	+		ow	Low spp diversity and/or predomin	nance of non	native o	or	_
		Moderate (3)				disturbance tolerant native spec	ies			
		Moderately low (2)		r	nod	Native spp are dominant component	ent of the veg	jetation	i.	
		Low (1)				although nonnative and/or distu	rbance tolera	nt nativ	/e spp	
		None (0)				can also be present, and specie	,		e to	
		. Coverage of invasive pla				moderately high, but generallyw	/lo presence	of rare		
		Table 1 ORAM long form f				threatened or endangered spp				—
	or	deduct points for coverage		r	nigh	A predominance of native species and/or disturbance tolerant nation				
		Extensive >75% co Moderate 25-75%	• •			absent, and high spp diversity a				
	-3	Sparse 5-25% cov	` '			the presence of rare, threatened				
		Nearly absent <5%				The production of the time and the	r. or orranige			—
		Absent (1)		Mudflat a	nd Open Wa	ter Class Quality				
	60	I. Microtopography.			0	Absent <0.1ha (0.247 acres)				
	Sc	cor <u>e all present using 0 to 3</u>	3 scale.		1	Low 0.1 to <1ha (0.247 to 2.47 ac	res)			
		Vegetated hummu		-	2	Moderate 1 to <4ha (2.47 to 9.88	acres)			
	_	O Coarse woody deb			3	High 4ha (9.88 acres) or more				
	0	O Standing dead >25								
		Amphibian breeding	g pools	Microtopo	graphy Cov					
					1	Absent Present very small amounts or if r	more commo			
					ı	of marginal quality	HOLE COLLING			
					2	Present in moderate amounts, bu	t not of highe	st		
					_	quality or in small amounts of hi	-			
				-	3	Present in moderate or greater ar	•			

24 /5 GRAND TOTAL(max 100 pts)

4c. Habitat alteration. Score one or do	uble check and average.	
None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapting removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment

Site: /	Hardm	Courty	und	R	ater(s): M	Ray	Date: 6/20/14
		٦					
	42						
	subtotal this pa						
	I	Ī					
5	47	Met	ric 5. Specia	al We	tlands.		
max 10 pls,	subtotal		Il that apply and score as				
,			Bog (10)				
			Fen (10)				
			Old growth forest (10)				
		⊢ X	Mature forested wetland Lake Erie coastal/tributa		unrestricted bydrol	logy (10)	
			Lake Erie coastal/tributa	•		=- : :	
			Lake Plain Sand Prairie	-			
			Relict Wet Praires (10)				
		⊢	Known occurrence state		-	•	
		\vdash	Significant migratory so Category 1 Wetland. So	-			
	T	┐ └	Category i vvettano. Si	ee Questioi	i i Qualitative iNatii	ng (-10)	
5	52	Met	ric 6. Plant	comn	nunities.	interspersion, mici	otopography.
max 20 pts.	subtotal	_	land Vegetation Commun		·='	munity Cover Scale	
			I present using 0 to 3 scal		0	Absent or comprises <0.1ha (0.3	2471 acres) contiguous area
			Aquatic bed		1	Present and either comprises sr	nall part of wetland's
		<u> </u>	Emergent			vegetation and is of moderate	· · ·
		 	Shrub		2	significant part but is of low qu	
		 	Forest Mudflats		۷	Present and either comprises si- vegetation and is of moderate	•
			Open water			part and is of high quality	quality or complicate a small
			Other		3	Present and comprises significa	nt part, or more, of wetland's
			zontal (plan view) Interspe	ersion.		vegetation and is of high quali	ty
		Select o			Named a Broom		
		-	High (5) Moderately high(4)		low	iption of Vegetation Quality Low spp diversity and/or predon	inance of nonnative or
		-	Moderate (3)		1011	disturbance tolerant native spe	
		<u> </u>	Moderately low (2)		mod	Native spp are dominant compo	
			Low (1)			although nonnative and/or dist	urbance tolerant native spp
		. Ļ	None (0)			can also be present, and spec	
			erage of invasive plants. 1 ORAM long form for lis			moderately high, but generally threatened or endangered spp	•
			ct points for coverage	i. Add	high	A predominance of native specie	
			Extensive >75% cover (-5)	J	and/or disturbance tolerant na	• •
			Moderate 25-75% cover	r (-3)		absent, and high spp diversity	and often, but not always.
		本	Sparse 5-25% cover (-1			the presence of rare, threaten	ed. or endangered spp
		⊢	Nearly absent <5% cover Absent (1)	er (0)	Mudflat and One	en Water Class Quality	
		6d. Micr	Totopography.		0	Absent <0.1ha (0.247 acres)	
			present using 0 to 3 scal	le.	1	Low 0.1 to <1ha (0.247 to 2.47 a	acres)
			Vegetated hummucks/tu	ussucks	2	Moderate 1 to <4ha (2,47 to 9,8	8 acres)
			Coarse woody debris >1		3	High 4ha (9.88 acres) or more	
		1 *	Standing dead >25cm (Minustana 1	ny Cover Seets	
		<u> </u>	Amphibian breeding poo	SIC	Microtopograph 0	Absent	
					1	Present very small amounts or it	f more common
						of marginal quality	
					2	Present in moderate amounts, b	· · · · · · · · · · · · · · · · · · ·
						quality or in small amounts of	
					3	Present in moderate or greater a and of highest quality	imourits
	1					I and or riightest quality	

Site:	Hordn	count;	y und	Rater(s):	M. Ruy		Date:	6/20/19
2	2] Metri	c 1. Wetland	Area (siz	e).	Circle: PEM PSS	S PFO	
rnax 6 pts.	subtotal	25 25 3 3 5 0.	size class and assign score. 50 acres (>20.2ha) (6 pts) 5 to <50 acres (10.1 to <20.2 0 to <25 acres (4 to <10.1ha) to <10 acres (1.2 to <4ha) (3.3 to <3 acres (0.12 to <1.2ha). 1 to <0.3 acres (0.04 to <0.1	2ha) (5 pts)) (4 pts) 3 pts) a) (2pts)		Circle: Isolated # of flags:	Adjacent	Abutting
\	5]	0.1 acres (0.04ha) (0 pts)			Continue offsite?	•	
max 14 pts.	subtotal	2a. Calcula M M N N 2b. Intensit	c 2. Upland by the average buffer width. Selection of the average buffer width. Selection of the average support o	lect only one and a (164ft) or more aro im to <50m (82 to 0m to <25m (32ft erage <10m (<32ft) Select one or doub der forest, prairie. hrubland, young se ential. fenced pastu	ssign score. Do und wetland per <164ft) around w to <82ft) around around wetland le check and av savannah, wildli econd growth for ure, park, conser	o not double check. imeter (7) vetland perimeter (4) wetland perimeter (1) perimeter (0) erage. fe area, etc. (7) rest. (5) rvation tillage, new fallow field		
15 max 30 pts.	Z O subtotal	3a. Source:	c 3. Hydrolog s of Water. Score all that ap igh pH groundwater (5) ther groundwater (3) recipitation (1) easonal/Intermittent surface erennial surface water (lake of um water depth. Select only 0.7 (27.6in) (3) 4 to 0.7m (15.7 to 27.6in) (2) 0.4m (<15.7in) (1) ations to natural hydrologic recovered (7) ecovered (7) ecovering (3) ecent or no recovery (1)	ply. water (3) or stream) (5) one and assign sci	3d. ore. <u>or double check</u> ances observed	Connectivity. Score all that 100 year floodplain (1) Between stream/lake Part of wetland/upland Part of riparian or upla Duration inundation/saturat Semi- to permanently Regularly inundated/s Seasonally inundated seasonally saturated at and average. point source (nonstorr filling/grading road bed/RR track dredging other	and other hum d (e.g. forest), and corridor (1) tion. Score one inundated/satu aturated (3) (2) in upper 30cm	complex (1)) e or dbl check. urated (4)
7,5	27,5	Metric	c 4. Habitat A	Iteration	and De	velopment.		
max 20 pts.	subtotal	4a. Substra Re Re Re Ab. Habitat Ex Ve MM Fa X Pc	ate disturbance. Score one of one or none apparent (4) ecovered (3) ecovering (2) ecent or no recovery (1) development. Select only or excellent (7) ery good (6) good (5) oderately good (4) air (3) cor to fair (2) cor (1) alteration. Score one or dou	or double check and	d average.			
s	27,5	Re	one or none apparent (9) ecovered (6) ecovering (3) ecent or no recovery (1)	Check all disturbation mowing grazing clearcutting selective cut woody debrit toxic pollutar	iting s removal	shrub/sapling removal herbaceous/aquatic be sedimentation dredging farming nutrient enrichment	- 11	

Site:	Hordn	county wad	Rater(s): 🎤	1. 12 est	Date: 6/20//9
	Γ				
	27,5	1			
	subtotal this pa	 gé			
0	27,0	Metric 5. Special W	etlands		
<u> </u>		-			
max 10 pts	. subtotal	Check all that apply and score as indicate Bog (10)	u.		•
		Fen (10)			
		Old growth forest (10)			
		Mature forested wetland (5)			
		Lake Erie coastal/tributary wetla	nd-unrestricted hydr	ology (10)	
		Lake Erie coastal/tributary wetla	nd-restricted hydrolo	ogy (5)	
		Lake Plain Sand Prairies (Oak C	Openings) (10)		
		Relict Wet Praires (10)			
		Known occurrence state/federal	threatened or endar	ngered species (10)	
		Significant migratory songbird/w	ater fowl habitat or u	ısage (10)	
		Category 1 Wetland. See Ques	tion 1 Qualitative Ra	iting (-10)	
,,	31,5				
_ 4	200	JMetric 6. Plant com	munities,	, interspe	rsion, microtopography.
max 20 pts	. subtotal	6a. Wetland Vegetation Communities.	Vegetation Co	mmunity Cover Sc	ale
		Score all present using 0 to 3 scale.	0	Absent or	comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present a	nd either comprises small part of wetland's
		Emergent	*	vegetati	on and is of moderate quality, or comprises a
		Shrub			nt part but is of low quality
		Forest	2		nd either comprises significant part of wetland's
		Mudflats		-	on and is of moderate quality or comprises a small
		Open water			is of high quality
		Other	3		nd comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion. Select only one.		vegetati	on and is of high quality
		High (5)	Narrative Desc	cription of Vegetati	on Quality
		Moderately high(4)	low		liversity and/or predominance of nonnative or
		Moderate (3)		I	nce tolerant native species
		Moderately low (2)	mod	. 1	are dominant component of the vegetation.
		Low (1)		although	nonnative and/or disturbance tolerant native spp
		None (0)		can also	be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderat	tely high, but generallyw/o presence of rare
		to Table 1 ORAM long form for list. Add		threaten	ed or endangered spp
		or deduct points for coverage	hìgh	1 '	inance of native species, with nonnative spp
		Extensive >75% cover (-5)		ľ	listurbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)			and high spp diversity and often, but not always.
		Sparse 5-25% cover (-1)		the pres	ence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0) Absent (1)	Mudflet and O	non Mator Class O	uality
		6d. Microtopography.	0	pen Water Class Q	0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1		o <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2		1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6i			(9.88 acres) or more
		Standing dead >25cm (10in) dbl		Ly	· · · · · · · · · · · · · · · · · · ·
		Amphibian breeding pools		hy Cover Scale	
			0	Absent	
			1	Present ve	ery small amounts or if more common
				of margi	inal quality
			2	l l	moderate amounts, but not of highest
					or in small amounts of highest quality
			3		moderate or greater amounts
	_			and of h	ighest quality

Appendix E Ohio EPA Stream Data Forms

OhioEPA

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI	Score:	26
The state of the s		

Stream & Location:	RA-19	S-Mr	r-2		RM:	Date: 66	1 19100 19
(UT to Scioto	River)	s		ll Name & Affiliation:	11.51		
River Code:		STORET #:		at./Long.:40 . 674	4 183.	7534	Office verified location
1] SUBSTRATE Check	(ONLY Two sub	ostrate TYPE BOXES very type present	;	Check C	NE (<i>Or 2</i> &	average)	
BEST TYPES BLDR /SLABS [10] BOULDER [9] COBBLE [8] GRAVEL [7] SM SAND [6] BEDROCK [5]	POOL RIFFLE	OTHER TYPE HARDPAN [4] DETRITUS [3] MUCK [2] SILT [2] ARTIFICIAL [POOL RIFI	ORIGIN ULIMESTONE [1] TILLS [1] WETLANDS [0]	SILT	QUALIT QUALIT HEAVY [-2] MODERATE NORMAL [0] FREE [1] MODERATE MODERATE NORMAL [0]	E [-1] Substrate
quality: 3-Highest quality in	quality; 2-Mo n moderate or g , well developed S [1] GETATION [1]	derate amounts, but reater amounts (e.g., rootwad in deep / fa	not of highest very large bo st water, or de 0cm [2] S [1]	I amounts or if more common quality or in small amounts oulders in deep or fast water, sep, well-defined, functional — OXBOWS, BACKWATE — AQUATIC MACROPHYT LOGS OR WOODY DEB	of highest large pools. [RS [1] [res [1] [Check ONE (Or 2 EXTENSIVE >7 MODERATE 26 SPARSE 5-<25 NEARLY ABSE	& average) [5% [11] 6-75% [7] % [3]
3] CHANNEL MORPH	IOLOGY Che	ck ONE in each cate	gory (<i>Or 2 & a</i>	verage)			
SINUOSITY DEV ☐ HIGH [4] ☐ E ☐ MODERATE [3] ☐ G ☐ LOW [2] ☐ F,	ELOPMENT XCELLENT [7] OOD [5] AIR [3] OOR [1]		IZATION [4] 5 [3]	STABILITY HIGH [3] MODERATE [2] LOW [1]			hannel ximum 20
4] BANK EROSION A	ND RIPARIA	AN ZONE Check C	NE in each ca	ategory for EACH BANK (Or	2 per bank	& average)	
River right looking downstrea REROSION NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE [1]	RIPAI	RIAN WIDTH 50m [4] [RATE 10-50m [3] [DW 5-10m [2] [IARROW < 5m [1] [F P FORES SHRUB SHRUB RESIDE FENCE	LOOD PLAIN QUALIT T, SWAMP [3] FOR OLD FIELD [2] ENTIAL, PARK, NEW FIELD D PASTURE [1] PASTURE, ROWCROP [0]	[1]	ONSERVATION TRBAN OR INDUSTRIBUTION OF CONSTRUCTION OF CONSTRU	STRIAL [0] UCTION [0]
Comments							kimum 5
☐ 0.7-<1m [4]	CHA Check Of POOL WIDT	RUN QUALITY NNEL WIDTH NE (Or 2 & average) H > RIFFLE WIDTH [H = RIFFLE WIDTH [H > RIFFLE WIDTH [2] ☐ TORR 1] ☐ VERY 0] ☐ FAST ☐ MODE	CHECK ALL that apply Check ALL that apply ENTIAL [-1] SLOW [1] FAST [1] INTERSTITE [1] INTERMITT ERATE [1] EDDIES [1] cate for reach - pools and riff.	ENT [-2]		ontact Contact
Indicate for funct	ional riffles:	Best areas mu	st be large	enough to support a	populat	ion	
of riffle-obligate s RIFFLE DEPTH □ BEST AREAS > 10cm [2] □ BEST AREAS 5-10cm [1] □ BEST AREAS < 5cm [metric=0] Comments	Species: RUN E MAXIMUN MAXIMUN	Check PEPTH RIF 1 > 50cm [2]	ONE (Or 2 & FLE / RUN BLE (e.g., Co D. STABLE (e	average). I SUBSTRATE RIFF	LE / RUN	<u>⊠NO RIF</u> I EMBEDDED INE [2] IW [1]	Riffle /
6] GRADIENT (DRAINAGE AREA	₫ мо	RY LOW - LOW [2-4] DERATE [6-10] H - VERY HIGH [10-		=	%GLIDE:	\subseteq	adient 4

prote to Chount FJ MEASUREMENTS floodprone x2 width bankfull max. depth bankfull x depth x bankfull width entrench. ratio Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc. Legacy Tree: max. depth W/D ratio x depth x width HARDENED / URBAN / DIRT&GRIME LOGGING / IRRIGATION / COOLING FALSE BANK / MANURE / LAGOON BMPs-CONSTRUCTION-SEDIMENT WWTP / CSO / NPDES / INDUSTRY NATURAL / WETLAND / STAGNANT WASH H₂0 / TILE / H₂0 TABLE ACID / MINE / QUARRY / FLOW ATMOSPHERE / DATA PAUCITY PARK / GOLF / LAWN / HOME BANK / EROSION / SURFACE CONTAMINATED / LANDFILL EJ ISSUES Norrow Riparion dred Circle some & COMMENT FLOOD CONTROL / DRAINAGE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MODIFIED / DIPPED OUT / NA MOVING-BEDLOAD-STABLE IMPOUNDED / DESICCATED YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED DJ MAINTENANCE RELOCATED / CUTOFFS ARMOURED / SLUMPS LEVEED / ONE SIDED ISLANDS / SCOURED 5 Obreeve INVASIVE MACROPHYTES Reach CSOs/SSOs/OUTFALLS **BJAESTHETICS** EXCESS TURBIDITY ☐ NUISANCE ALGAE INVASIVE MACROPH ☐ SLUDGE DEPOSITS DISCOLORATION
FOAM / SCUM
OIL SHEEN
TRASH / LITTER POOL: ->100ft2->3ft AREA DEPTH ☐ NUISANCE ODOR Stream CJ RECREATION □ > 70 cm/ CTB □ SECCHI DEPTH□ ☐ HIGH ☐ HGH ☐ ☐ NORMAL ☐ ☐ 1st -sample pass- 2nd --sample pass--CLARITY STAGE □ 20-<40 cm Stream Drawing: AJ SAMPLED REACH □ 40-70 cm □ LOW 1st --sample p **X** < **20 cm** Check ALL that apply X > 85%- OPEN55%-<85%30%-<55%10%-<30%10%- CLOSED <10%-CLOSED CANOPY DISTANCE 0.15 Km 0.12 Km METHOD 0.5 Km 0.2 Km OTHER WADE L. LINE L. LINE OTHER meters □ BOAT



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:	(22)
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	Stream & Location: Hordin	wind 450lax	RM:	Date: E LIALL &
STR	- HW-ML		ull Name & Affiliation: M.Mo	Date:5/10/18
·	River Code:	STORET #:	at./Long.:40 .6967/83.	
	1] SUBSTRATE Check ONLY Two SL	ihstrate TVPE BOYES		
	estimate % or note a BEST TYPES POOL RIFFLE	OTHER TYPES	Check ONE (Or 2 & ORIGIN	average) QUALITY
	☐ ☐ BLDR /SLABS [10]	☐ ☐ HARDPAN [4]	LIMESTONE [1]	BHEAVY [-2]
	☐☐ BOULDER [9]	DETRITUS [3]	量TILLS[1] SILT	☐ MODERATE [-1] Substrate
	☐ ☐ GRAVEL [7]	SILT [2] GO G	35 □ WETLANDS [0] SILI D □ HARDPAN [0]	□ NORMAL [0] □ FREE [1]
	SAND [6] 5 5	☐ ☐ ARTIFICIAL [0]	SANDSTONE [0] SODEO	EXTENSIVE [-2]
		(Score natural substrates; io or more [2] sludge from point-sou	gnore RIP/RAP [0]	MODERATE [-1] Maximum S NORMAL [0] 20
	Comments	or less [0]		□ NONE [1]
	<u>4+0+1-2-2</u>	<u> </u>	☐ COAL FINES [-2]	
	2] INSTREAM COVER Indicate pres			AMOUNT
	quality; 3-Highest quality in moderate or g diameter log that is stable, well developed		oulders in deep or fast water, large	Check ONE (Or 2 & average)
	UNDERCOT BANKS [1]	- O POOLS > 70cm (2)	A service to the contract of t] EXTENSIVE >75% [11]] MODERATE 25-75% [7]
	OVERHANGING VEGETATION [1] SHALLOWS (IN SLOW WATER) [1	O ROOTWADS [1]	AQUATIC MACROPHYTES [1] 📲	SPARSE 5-<25% [3]
	ROOTMATS [1]	I BOULDERS [1]	LOGS OR WOODY DEBRIS [1]	NEARLY ABSENT <5% [1]
	Comments			Cover S Maximum S
	1+1+1+1+3			20
	3] CHANNEL MORPHOLOGY Che SINUOSITY DEVELOPMENT		= *	
	☐ HIGH [4] ☐ EXCELLENT [7]	CHANNELIZATION NONE [6]	STABILITY HIGH [3]	
	☐ MODERATE [3] ☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	
:	☐ LOW [2] ☐ FAIR [3] ■ NONE [1] ■ POOR [1]	☐ RECOVERING [3] RECENT OR NO RECOVER	FOM [1]	Channel
	Comments		viji.	Maximum
6 - 6	1+ + +			20
	4] BANK EROSION AND RIPARIA	AN ZONE Check ONE in each ca RIAN WIDTH (B F	ategory for <i>EACH BANK</i> (Or 2 per bank & LOOD PLAIN QUALITY	& average)
	LR EROSION DWIDE>	50m [4] 🗖 🛱 FORES	, ,	DNSERVATION TILLAGE [1]
,	□ NONE / LITTLE [3] □ □ MODEF MODERATE [2] □ □ NARRO	RATE 10-50m [3] 🔲 🔲 SHRUB	OR OLD FIELD [2]	RBAN OR INDUSTRIAL [0]
	☐ ☐ HEAVY / SEVERE [1] ☐ ☐ VERY N	IARROW < 5m [1] FENCE		NING / CONSTRUCTION [0]
	Comments NONE	0] TOPEN F		oredominant land use(s) m riparian. Riparian
	2+0+0			Maximum 🗬
'	5] POOL / GLIDE AND RIFFLE / R	UN QUALITY		10
	MAXIMUM DEPTH CHAI	NNEL WIDTH C		Recreation Potential
	□ > 1m [6] □ POOL WIDT	IE (Or 2 & average) H > RIFFLE WIDTH [2]. □ TORRI	Check ALL that apply ENTIAL [-1] SLOW [1]	Primary Contact
	☐ 0.7-<1m [4] ☐ POOL WIDTI	H = RIFFLE WIDTH [1] VERY	FAST [1] INTERSTITIAL [-1]	Secondary Contact (circle one and comment on back)
		H < RIFFLE WIDTH [0] FAST	[1] ☐ INTERMITTENT [-2] ☐ RATE [1] ☐ EDDIES [1]	
	☐ < 0.2m [0]	Indic	ate for reach - pools and riffles.	Pool / Current
	Comments + 0+ +			Maximum 12
, e90m.	Indicate for functional riffles;	Best areas must be large	enough to support a population	on _
	of riffle-obligate species: RIFFLE DEPTH RUN D	Check ONE (Or 2 &	average).	☐NO RIFFLE [metric=0]
	☐ BEST AREAS > 10cm [2] ☐ MAXIMUM	> 50cm [2] T STABLE (e.g., Co	hble Boulder 121	EMBEDDEDNESS
	☐ BEST AREAS 5-10cm [1] ■ MAXIMUM ■ BEST AREAS < 5cm	< 50cm [1] I MOD. STABLE (e.	.g., Large Gravel) [1] LOV	V [1]
	[metric=0]	THE UNDIABLE (e.g.,	Fine Gravel, Sand) [0] MOI	DERATE [0] Riffle / Run ENSIVE [-1] Maximum
_	<u> </u>		- LAI	LNSIVE [-1] Maximum 8
. (Y LOW - LOW [2-4]	%POOL:(15) %GLIDE:(5 Gradient
		DERATE [6-10] H - VERY HIGH [10-6]	%RUN: (80)%RIFFLE:(Maximum
=		# T T T-E		10

AJ SAMPLED REACH Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc. Check ALL that apply	METHOD STAGE TIST-Sample pass-2nd	WADE CHIGH CHICKLE TO THE CHICKLE CHICKLE CHICKLE		DISTANCE DEW D	RITY BJAESTHETICS DJ MAINTENANCE Circle some & COMMENT Pass 2nd I NUISANCE ALGAE PUBLIC / PRIVATE / BOTH / NA SM	HEIGH COLLING HEVED OUT THAT HE OIL SHEEN CM TRIGATION (COOLING) BANK (EROSION-SURFACE BANK (MANURE) LAGON WASH H20 (TILE) H20 TABLE ACID / MINE / QUARRY / FLOW NATURALS IMPOUNDED / DESICCATED PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY ATMOSPHERE / DATA PAUCITY	Stream Drawing:	Row Crop	Cooney Diten			the outlet	Row Crop	
--	-----------------------------------	---	--	----------------	---	--	-----------------	----------	--------------	--	--	------------	----------	--

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

ChieEPA

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI	Score:	(27)
	and the second second	

Stream & Location:		RM:Date:5/[4/1] 7	
	Scorers	Full Name & Affiliation: M. Molnar TRC	
River Code:	STORET#:	Lat./Long.:140.6876/83.8422 Office verified location	
1] SUBSTRATE Check ONLY Tw	o substrate TYPE BOXES;	Check ONE (Or 2 & average)	
BEST TYPES POOL RIF	te every type present LE OTHER TYPES POOL	ORIGIN QUALITY	
☐ ☐ BLDR/SLABS [10]	HARDPAN [4]	LIMESTONE 11 LINEAVI 1-21	
D BOULDER [9]		SILT MODERATE [4] Substrate	
□□ COBBLE [8] □□ GRAVEL [7] 25 21		GO DHARDPAN [0] DEREE[1]	
□□ sand [6] 15 IE	ARTIFICIAL [0]	SANDSTONE [0] CODES DEXTENSIVE [-2]	
☐☐ BEDROCK [5] NUMBER OF BEST TYPES: ☐	Score natural substrat 3 4 or more [2] sludge from point	es; ignore	
Comments	7 3 or less [0]	LI NONE (1)	
2+2+0+1-	1	☐ COALFINES [-2]	
	presence 0 to 3: 0-Absent; 1-Very	small amounts or if more common of marginal AMOUNT	
quality; 2-Highest quality in moderate	2-Moderate amounts, but not of hig or greater amounts (e.g., very large	small amounts or if more common of marginal hest quality or in small amounts of highest pe boulders in deep or fast water, large Check ONE (Or 2 & average)	
diameter log that is stable, well devel	oped rootwad in deep / tast water,	or deep, well-defined, functional pools.	
UNDERCUT BANKS [1] \OVERHANGING VEGETATION	OPOOLS > 70cm [2]	Oxbows, backwaters [1] ☐ MODERATE 25-75% [7] O AQUATIC MACROPHYTES [1] ☐ SPARSE 5-<25% [3]	
SHALLOWS (IN SLOW WATER	NAME AND THE PARTY OF THE PARTY	LOGS OR WOODY DEBRIS [1] NEARLY ABSENT <5% [1]	
O_ROOTMATS [1]		Cover	
Comments		Maximum 3 6	
31 CHANNEL MORPHOLOGY	Check ONE in each category (Or:	2 & average)	
SINUOSITY DEVELOPME			
☐ HIGH [4] ☐ EXCELLENT	[7] NONE [6]	া High (য়	
☐ MODERATE [3] ☐ GOOD [5] ☐ BAIR [3]	☐ RECOVERED [4]	☐ MODERATE [2]	
ONE[1] POOR[1]	RECENT OR NO RECO	OVERY [1] Channel	
Comments		Maximum 7	`
AT TANK EROSION AND DIE	ADIAN ZONE OLI LIONELI	TACURANICO O CARLO DE	2
	PARIAN WIDTH	ch category for EACH BANK (Or 2 per bank & average) FLOOD PLAIN QUALITY	•
ւթ EROSION 📥 🗋 🖼 wii	L	REST, SWAMP [3] D CONSERVATION TILLAGE [1]	
□□NONE/LITTLE[3] □□MC	DERATE 10-50m [3] 🔲 🗆 SH	RUB OR OLD FIELD [2] 🔲 🔲 URBAN OR INDUSTRIAL [0]	
		SIDENTIAL, PARK, NEW FIELD [1]	
		NCED PASTURE [1] Indicate predominant land use(s) EN PASTURE, ROWCROP [0] past 100m riparian. Riparian	
Comments	,	Maximum 5	እ
6 + + ()	TOUN OUALITY	10	,
5] POOL / GLIDE AND RIFFLE MAXIMUM DEPTH C	HANNEL WIDTH	CURRENT VELOCITY Recreation Potential	
Check ONE (ONLY!) Chec	k ONE (Or 2 & average)	Check ALL that apply Primary Contact	
		ORRENTIAL [1] SLOW [1] Secondary Contact [1] Circle one and comment on back	
		AST [1] INTERMITTENT [-2]	
2 0.2-<0.4m [1]	₩ M	ODERATE [1] FDDIES [1] Pool / Current C	
Comments		Maximum ()	١
1 TN +1 +	T D	12	'
of riffle-obligate species:		arge enough to support a population NO RIFFLE [metric=0]	
RIFFLE DEPTH RU	N DEPTH RIFFLE / I	RUN SUBSTRATE RIFFLE / RUN EMBEDDEDNESS	
BEST AREAS > 10cm [2] MAX	MUM > 50cm [2] STABLE (e.g	g., Cobble, Boulder) [2] NONE [2]	
☐ BEST AREAS < 5cm	MUM < 50cm [1] ☐ MOD. STAB ☐ UNSTABLE	(e.g., Fine Gravel, Sand) [0] MODERATE [0] Riffle	
[metric=0] Comments		☐ EXTENSIVE [-1] Run O	
· · · · · · · · · · · · · · · · · · ·	·	8	
	VERY LOW - LOW [2-4]	%POOL: %GLIDE: (100) Gradient	
DRAINAGE AREA 電 (る, 5 ん mi²) ロ	MODERATE [6-10] HIGH - VERY HIGH [10-6]	%RUN: %RIFFLE: Maximum 10	₹

cess directions, etc.	7			FJ MEASUREMENTS X width. X depth max.depth. X bankfull width bankfull X depth.	Wilbiratio bankfull max, depth floodprone x² width entrench, ratio Legacy Tree:					
Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.				WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPS-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE	FALSE BANK / MANURE / LAGOON WASH H ₂ 0 / TILE / H ₂ 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY					
/ Observed - Inferred, Other				Circle some & COMMENT				*		
each typical of steam?, <i>Recreatior</i>	4.		V,	DJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED	NELLCA IED / CUI UFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE		ter	 	S25	
nment RE: Reach consistency/ Is n F7S M 00522	THWMINDEN:81	Depth: 1.5	•	BJAESTHETICS NUISANGEAUGAE INVASIVENIAGROPHYTES EXCESS TURBIDITY DISCOLORATION FOAM / SCUIM OIL SHEEN	ASAN ELLIER RANCE ODOR UDGE DEPOSITS OS/SSOS/OUTFALLS AREA DEPTH	,	ROM	Last 1 Flow	300	
PLED REACH cot ALL that apply D STAGE	1st -sample pass-2nd — HIGH ☐		DISTANCE DRY	n CCTB	N est cm 2nd cm CJ RECREA	Stream Drawing:	2			

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6/27/2019 1:51:52 PM

in

Case No(s). 09-0479-EL-BGN, 11-3446-EL-BGA, 16-0469-EL-BGA, 16-2404-EL-BGA

Summary: Notification of Phase 3 – Compliance with Condition 57(a), 2019 Wetlands Delineation Report (Laydown Areas) electronically filed by Christine M.T. Pirik on behalf of Hardin Wind Energy LLC