



Environmental Design & Research,
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memorandum

To: Seth Wilmore **EDR Project No:** 17094
From: Ben Brazell
Date: November 30, 2017
Reference: Buckeye Amendment
Wetland Delineation

Comments:

Introduction

The Ohio Power Siting Board (“OPSB”) issued an Opinion, Order and Certificate in Case No. 08-0666-EL-BGN on March 22, 2010 to Buckeye Wind Farm LLC, a wholly-owned subsidiary of EverPower Wind Holdings, Inc., to construct the Buckeye Wind Project (hereafter referred to as Buckeye I). On May 28, 2013, the OPSB issued an Opinion, Order and Certificate in Case No. 12-0160-EL-BGN to Champaign Wind LLC, a wholly-owned subsidiary of EverPower Wind Holdings, Inc. to construct the Buckeye II Wind Farm (hereafter referred to as Buckeye II). The OPSB subsequently approved an Amendment (Case No. 13-0360-EL-BGA) on February 18, 2014 and added to the previously permitted layout of the Buckeye I Wind Farm. EverPower is currently proposing changes to both the Buckeye I and II Wind Farm and filing an Application for modifications under Case Nos. xx-xxxx-EL-BGA and xx-xxxx-EL-BGA (hereafter referred to as the Buckeye Amendment).

Field delineations of wetland and stream features within the anticipated limit of disturbance for all Buckeye I and II Facility components were conducted by Hull & Associates, Inc. in the summer/fall of 2008 and the fall/winter of 2011. The results of these delineations were summarized in a report submitted to the OPSB as Exhibit M of the Buckeye I Wind Farm Certificate Application and Exhibit H of the Buckeye II Wind Farm Certificate Application.

Buckeye Wind Farm LLC and Champaign Wind LLC, both subsidiaries of EverPower Wind Holdings, Inc. (and hereafter referred to collectively as the “Joint Applicant”), are currently preparing a petition to amend their existing Certificates. The Joint Applicant is not proposing additional turbine locations. The proposed turbine layout will include the elimination of 53 turbines (25 from Buckeye I and 28 from Buckeye II). Proposed changes to the permitted Facilities also includes a different turbine model; a single point of interconnection; an updated Project schedule; and modified locations for

several access roads and collection lines. The permitted layouts of Buckeye I and II, in addition to the proposed changes in the Buckeye Amendment, are collectively referred to as the “Amended Facility” (see Attachment 1).

The wetland and stream delineations conducted in support of the Buckeye I and Buckeye II Wind Farm Certificate Applications focused on the anticipated limits of disturbance associated with the Facility layouts proposed in those Applications (and subsequently approved). Since the amendment is proposing to relocate some project components, the anticipated limits of disturbance associated with these amended Facility components were not included in the original delineation efforts. At the request of the Joint Applicant, Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) prepared this memorandum summarizing the wetland delineations conducted in the vicinity of the proposed modified components for the Amended Facility.

Methodology

EDR partnered with an Ohio-based firm, Cardno, to conduct wetland and stream delineations within the anticipated limit of disturbance associated with modified project components of the Amended Facility. A 100-foot corridor was applied to new Facility components. Wetland delineations were conducted by Cardno personnel according to the *United States Army Corps of Engineers (USACE) Wetland Delineation Manual* (Environmental Laboratory, 1987) and the applicable *Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE, 2010). The methodology outlined in the two manuals requires three criteria to be met for an area to be deemed a wetland including, dominance of hydrophytic vegetation, hydric soils, and sufficient hydrology.

Hydrophytic vegetation criterion is met when over 50% of the plant community is hydrophytic which is determined by specie dominance. After identifying plant species present within the study area, the dominance and indicator status for each specie was determined. Based on the results, vegetative communities were deemed to be indicative of either a wetland or a non-wetland. In addition, soil data were used to determine hydric properties of the site. The hydric criterion of soils was determined in the field using hydric ranges on the Munsell Color Chart. Hydric soils are poorly drained, and their presence is indicative of the likely occurrence of wetlands (Environmental Laboratory, 1987). Hydrology criterion is met when sufficient hydrologic indicators are present including, evidence of standing water, saturated soils, geomorphic position within the landscape, drainage patterns, water-stained leaves, and morphological adaptation of vegetation. Areas of sufficient saturation or inundation with a hydrophytic plant-dominated vegetative community are typical characteristics of a wetland.

To determine the ecological quality of wetlands, qualitative assessments were conducted utilizing the Ohio Rapid Assessment Method (ORAM) for Wetlands (see Attachment 2). Through the ORAM, wetlands are scored based on hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into sub-categories under ORAM v5.0 resulting in a cumulative score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands with scores from 0 to 29.9 are classified as Category 1, while those with scores of 30 to 59.90 are classified as Category 2, and those with scores of 60 to 100 are classified as Category 3 (OEPA, 2001).

Wetland and stream delineations took place in September and October of 2017. Wetland and stream boundaries were defined through the use of a Trimble® Global Positioning System (GPS) with sub-meter accuracy. Photographs were taken of each delineated wetland within the vicinity of the Amended Facility. Data were collected from one or more sample plots in each delineated wetland (depending on the size and diversity of ecological communities of the delineated area), and recorded on USACE Routine Wetland Determination forms (see Attachment 3). After delineations, the identified wetlands were scored using the Ohio EPA's ORAM. The ORAM scores a wetland based on hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities to determine its overall ecological "quality" and functionality. Scores can range from 0 to 100 and are subdivided into categories. Category 1 wetlands range in score from 0 to 29.9, Category 2 wetlands ranges from 30 to 59.9 and Category 3 ranges from 60 to 100. Categories 2 and 3 are classified as "good" quality wetlands, with Category 3 having high levels of diversity.

Flagging methods were used to mark the course of waterbodies found within the Facility Area. Observational notes were taken about the various stream characteristics such as flow regime and substrate. The Ohio Qualitative Habitat Evaluation Index (QHEI) scoring method or the Ohio Headwater Habitat Evaluation Index (HHEI), were utilized to classify the waterbodies present in the Facility Area (see Attachment 4). The HHEI is used on primary headwater habitat (PHWH) streams with drainage area less than one square mile and with maximum pool depths less than 40 centimeters. Headwater streams are small, first-order swales, creeks, and streams that are the origin of most rivers. These small streams join together to form larger streams and rivers, or run directly into larger streams and lakes (OEPA, 2002). The QHEI is used for streams with drainage areas greater than one square mile and/or with pool depths greater than 40 centimeters. This index was designed to provide a measure of habitat quality that corresponds to physical factors that affect communities of fish and aquatic invertebrates, and is based on six main metrics: substrate, instream cover, channel morphology, channel and bank condition, pool and riffle quality, and gradient. These larger and deeper streams have sufficient amounts of water throughout the year to support year-round fish communities (OEPA, 2006).

Results

A total of five streams and one wetland were identified within the Amendment Study Area during the 2017 field effort (Attachment 5). Most of these features consisted of agricultural field dominated by corn or soybean, and secondary growth forest vegetation dominated by red oak (*Quercus rubra*), sugar maple (*Acer saccharum*), shagbark hickory (*Carya ovata*), common hackberry (*Celtis occidentalis*), standing dead white ash (*Fraxinus americana*), black locust (*Robinia pseudoacacia*), and American elm (*Ulmus americana*). Information pertaining to individual wetlands and streams is summarized in the table below.

Feature ID	ORAM Score ¹	HHEI Score ¹	QHEI Score ¹	Qualitative Classification ²
Wetland 1	15	-	-	Category 1 Wetland
Stream 1	-	57	-	Modified Class II PHWH
Stream 4	-	28	-	Class I PHWH
Stream 5	-	23	-	Class I PHWH
Stream 6	-	13	-	Class I PHWH
Stream 7	-	13	-	Class I PHWH

¹ Subject to verification by Ohio EPA.

² Classification based on Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (OHEPA, 2009)

Conclusion

Potential impacts to surface water resources are anticipated to be limited, if not entirely avoided, for the proposed Facility. Wetland 1 is located 94 feet north of the closest Facility component and is not anticipated to be affected by because of the distance between features. Delineated streams 1, 5, and 6 will be crossed by a collection line, one of which is intermittent and two that are ephemeral. Stream 1 is an intermittent stream meaning that water flows for extended periods of time seasonally, but gradually reaches a state where it becomes an isolated pool of water, not hydrologically connected to other waterbodies. Streams 5 and 6 are ephemeral streams meaning that water flows only briefly during and immediately after a rain event. All streams that cross any portion of the Facility, do so across collection lines through the use of horizontal directional drilling (HDD). The hedgerow located to the north may be minimally impacted by HDD operations, but impacts are expected to be temporary in nature. No permanent impacts will result from such activities. Stream 4 and 7 are also ephemeral streams, but will not be crossed by any Facility components. Stream 4 is located 86 feet south of the nearest Facility component while stream 7 is located 25 feet west of the nearest Facility component. Both stream 4 and stream 7 are located outside the limit of disturbance for buried collection lines so no impacts are anticipated on those surface waters. Given the location of Facility components and delineated surface water resources, impacts are anticipated to be avoided.

References

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers: Waterways Experiment Station; Vicksburg, MS.

Ohio Environmental Protection Agency (OEPA). 2001. *Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms*. Ohio EPA Technical Report WET/2001-1. Division of Surface Water, Wetland Ecology Unit. Columbus, Ohio.

OEPA. 2002. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Division of Surface Water. Columbus, Ohio.

OEPA. 2009. *Field Evaluation for Ohio's Primary Headwater Streams*. Division of Surface Water. Columbus Ohio. Pg. 35.

OEPA. 2006. *Methods for Assessing Habitats in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. Division of Surface Water. Columbus, Ohio.

U.S. Army Corps of Engineers (USACE). 1987. *Wetlands Delineation Manual*. Technical Report Y-87-1. USACE Waterways Experiment Station, Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Attachments:

Attachment 1. Facility Layout

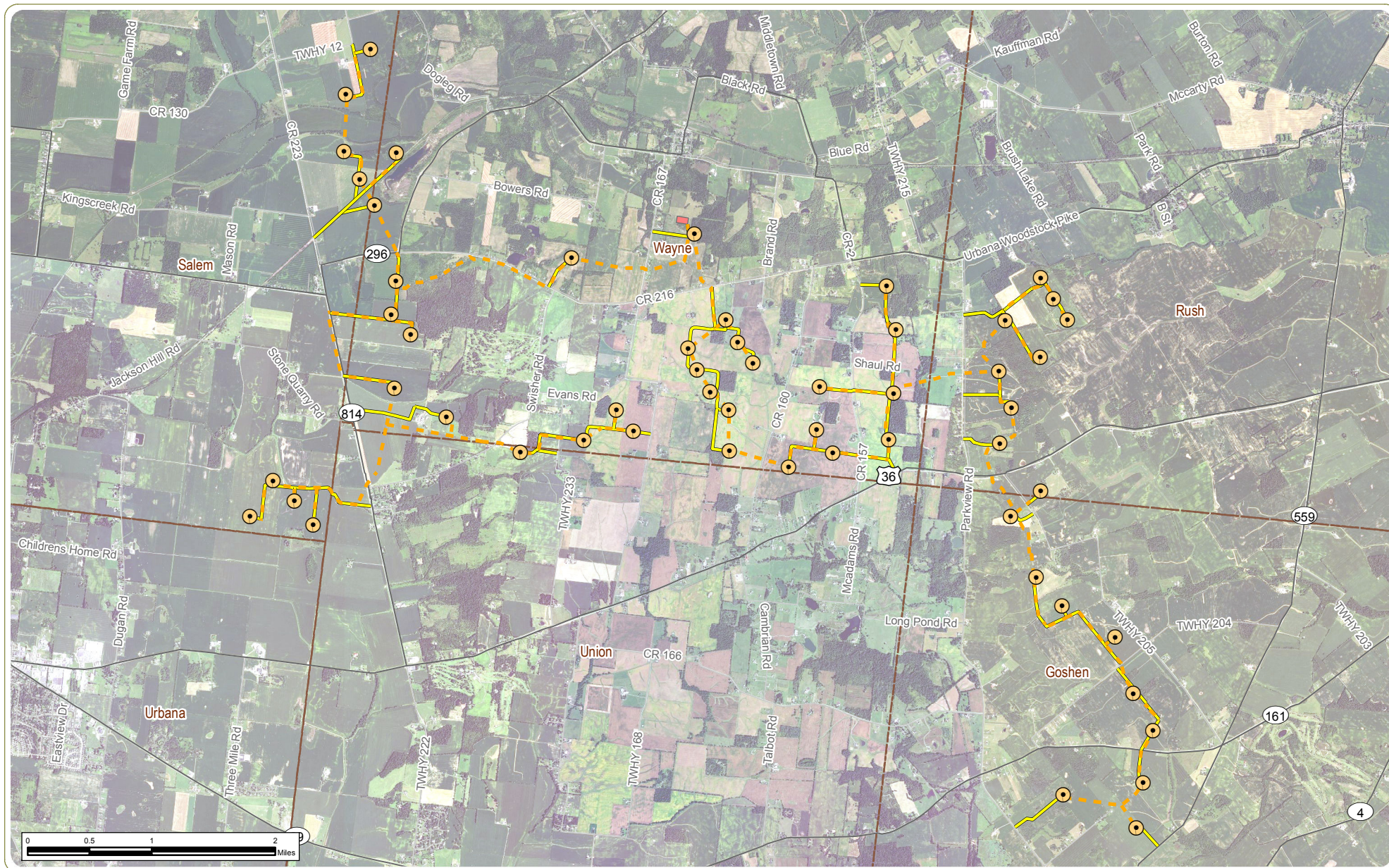
Attachment 2. ORAM Wetland Form

Attachment 3. USACE Routine Wetland Determination Form

Attachment 4. Ohio's QHEI and HHEI Form

Attachment 5. Delineated Wetland and Streams

Attachment 1



Buckeye Amendment

Goshen, Rush, Union, Urbana, Salem, Wayne Townships
Champaign County, Ohio

Attachment 1. Facility Layout

- Notes:**
1. Basemap: USDA NAIP "2015 Ohio 0.5m" orthoimagery map service.
 2. This map was generated in ArcMap on November 29, 2017.
 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Access Road
- Collection Line
- Substation
- Township Boundary



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Attachment 2

Background Information

Name:	Joel Thrash & Amy Cameron		
Date:	10/17/2017		
Affiliation:	Cardno, Inc		
Address:	1121 Canal Road, Sharonville, Ohio 45241		
Phone Number:	513. 771. 2112		
e-mail address:	Joel.Thrash@cardno.com / Amy.Cameron@cardno.com		
Name of Wetland:	Wetland 1		
Vegetation Community(ies):	Emergent		
HGM Class(es):	Depressional		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	40.140793, -83.577262		
USGS Quad Name	North Lewisburg		
County	Champaign		
Township	N/A		
Section and Subsection	N/A		
Hydrologic Unit Code	05060001		
Site Visit	2		
National Wetland Inventory Map	N/A		
Ohio Wetland Inventory Map	N/A		
Soil Survey	Brookston silty clay loam fine texture 0.2% slopes		
Delineation report/map			

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Name of Wetland: <u>Wetland 1</u>	
Wetland Size (acres, hectares): <u>0.01 acres</u>	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
<p>0.01 acres, dominated by <i>Typha x glauca</i>. Hydrology from field tile.</p>	
Final score :	<div>15</div> <div>Category: <u>1</u></div>

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	✓	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

Site: Wetland 1	Rater(s): J.Thrash/A.Cameron	Date: 10/13/2017
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 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) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

1	1
max 14 pts.	subtotal

Metric 2. Upland Buffers and Surrounding Land Use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	11
max 30 pts.	subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Score only one and assign score.

- ☐ >0.7 (27.6 in) (3)
- ☐ 0.4 to 0.7 m (15.7 to 27.6 in) (2)
- ☒ <0.4 m (<15.7 in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

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.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30 cm (12 in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input checked="" type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

7	18
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input checked="" type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input checked="" type="checkbox"/> nutrient enrichment |

18

Site: Wetland 1	Rater(s): J.Thrash/A.Cameron	Date: 10/13/2017
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18

subtotal this page

0	18
max 10 pts.	subtotal

Metric 5. Special Wetlands.

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-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain sand prairies (oak openings) (10)
- ☐ Relict wet prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 wetland. See Question 1 Qualitative Rating (-10)

-3	15
max 20 pts.	subtotal

Metric 6. Plant Communities, Interspersion, Microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. Horizontal (plan view) interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/tussucks
- ☐ 0 Coarse woody debris >15 cm (6 in)
- ☐ 0 Standing dead >25 cm (10 in) dbh
- ☐ 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

15	GRAND TOTAL (max 100 pts)
----	----------------------------------

Refer to the most recent ORAM Score Calibration Report for the scoring break points between wetland categories at the following address: <http://www.epa.state.oh.us/dswl/401/401.html>

Attachment 3

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Buckeye Wind City/County: Champaign County Sampling Date: 10/13/2017
 Applicant/Owner: Everpower State: OH Sampling Point: dp01
 Investigator(s): Joel P. Thrash/Amy Cameron Section, Township, Range: T5E, R12N
 Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): concave
 Slope (%): 0-2% Lat: 40.1408 Long: -83.5772 Datum: NAD83 UTM16N
 Soil Map Unit Name: Brookston silty clay loam, fine texture, 0 to 2 percent slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Number of Dominant Species
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	That Are OBL, FACW, or FAC: <u>2</u> (A)
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Species Across All Strata: <u>2</u> (B)
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				

Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Number of Dominant Species
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Species Across All Strata: <u>2</u> (B)
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Typha X glauca</u>	<u>85%</u>	<u>Yes</u>	<u>OBL</u>	Total % Cover of: <u>165%</u> Multiply by: <u>A/B</u>
2. <u>Symphyotrichum pilosum</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	That Are OBL, FACW, or FAC: <u>165%</u>
3. <u>Bidens frondosa</u>	<u>20%</u>	<u>No</u>	<u>FACW</u>	OBL species <u>165%</u> x1 = <u>1.65</u>
4. <u>Echinochloa crus-galli</u>	<u>15%</u>	<u>No</u>	<u>FACW</u>	FACW species <u>35%</u> x2 = <u>0.7</u>
5. <u>Setaria faberi</u>	<u>15%</u>	<u>No</u>	<u>FACU</u>	FAC species <u> </u> x3 = <u> </u>
6. <u>Persicaria hydropiper</u>	<u>10%</u>	<u>No</u>	<u>OBL</u>	FACU species <u>20%</u> x4 = <u>0.8</u>
7. <u>Scirpus atrovirens</u>	<u>5%</u>	<u>No</u>	<u>OBL</u>	UPL species <u> </u> x5 = <u> </u>
8. <u>Leersia oryzoides</u>	<u>60%</u>	<u>Yes</u>	<u>OBL</u>	Column Totals: <u>2.20</u> (A) <u>3.15</u> (B)
9. <u>Ludwigia palustris</u>	<u>5%</u>	<u>No</u>	<u>OBL</u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index = B/A = <u>1.43</u>
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
12. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
13. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
14. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
15. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
16. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
17. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
18. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
19. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
20. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
220% = Total Cover				

Hydrophytic Vegetation Indicators:

X 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
X 3-Prevalence Index is ≤3.0¹
 4-Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Yes <u>X</u> No <u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				

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

SOIL

Sampling Point: dp01**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 3/2	90	10YR 5/6	10	RM	M	Silt	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input checked="" type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)

Test Indicators of Hydric Soils:

<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

³The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>>16"</u>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>Surface</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>Surface</u>

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Buckeye Wind City/County: Champaign County Sampling Date: 10/13/2017
 Applicant/Owner: Everpower State: OH Sampling Point: dp02
 Investigator(s): Joel P. Thrash/Amy Cameron Section, Township, Range: T5E, R12N
 Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): none
 Slope (%): 0-2% Lat: 40.1408 Long: -83.5772 Datum: NAD83 UTM16N
 Soil Map Unit Name: Brookston silty clay loam, fine texture, 0 to 2 percent slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>		

Remarks:

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				

<u>Sapling/Shrub Stratum</u> (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
= Total Cover			

<u>Herb Stratum</u> (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Cirsium vulgare</u>	<u>20%</u>	<u>No</u>	<u>FACU</u>
2. <u>Festuca rubra</u>	<u>90%</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Melilotus officinalis</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>
4. <u>Echinochloa crus-galli</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>
5. <u>Plantago major</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>
6. <u>Solidago canadensis</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>
7. <u>Setaria faberi</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>
12. <u> </u>	<u> </u>	<u> </u>	<u> </u>
13. <u> </u>	<u> </u>	<u> </u>	<u> </u>
14. <u> </u>	<u> </u>	<u> </u>	<u> </u>
15. <u> </u>	<u> </u>	<u> </u>	<u> </u>
16. <u> </u>	<u> </u>	<u> </u>	<u> </u>
17. <u> </u>	<u> </u>	<u> </u>	<u> </u>
18. <u> </u>	<u> </u>	<u> </u>	<u> </u>
19. <u> </u>	<u> </u>	<u> </u>	<u> </u>
20. <u> </u>	<u> </u>	<u> </u>	<u> </u>
145% = Total Cover			

Total % Cover of:	Multiply by:
That Are OBL, FACW, or FAC:	<u>A/B</u>
OBL species <u> </u>	x1 = <u> </u>
FACW species <u>5%</u>	x2 = <u>0.1</u>
FAC species <u>5%</u>	x3 = <u>0.15</u>
FACU species <u>135%</u>	x4 = <u>5.4</u>
UPL species <u> </u>	x5 = <u> </u>
Column Totals: <u>1.45</u> (A)	<u>5.65</u> (B)
Prevalence Index = B/A = <u>3.90</u>	

Hydrophytic Vegetation Indicators:

 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)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

<u>Woody Vine Stratum</u> (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
= Total Cover			

Hydrophytic Vegetation
 Present? Yes No X

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

SOIL

Sampling Point: dp02**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 4/4	100					Silt	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)

Test Indicators of Hydric Soils:

<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

³The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Attachment 4



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

57

SITE NAME/LOCATION Everpower Site T25-T115

SITE NUMBER Stream 1 RIVER BASIN Treacle Creek DRAINAGE AREA (mi²) 1.7 sm
LENGTH OF STREAM REACH (ft) 230 LAT. 40.133000 LONG. -83.615 RIVER CODE RIVER MILE
DATE 9/29/2017 SCORER C.Jansing/A.Cameron COMMENT: River Code: 05060001210020

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS ☐ None / Natural Channel ☐ Recovered ☐ Recovering ☒ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 PTS]		<input checked="" type="checkbox"/> SILT [3 PTS]	100
<input type="checkbox"/> BOULDER (>256 mm) [16 PTS]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 PTS]		<input type="checkbox"/> CLAY or HARDPAN [0 PTS]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 PTS]		<input type="checkbox"/> MUCK [0 PTS]	
<input type="checkbox"/> SAND (<2 mm) [6 PTS]		<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of
Blr Slabs, Boulder, Cobble, Bedrock 0 (A)

6

(B)

1

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
PointsSubstrate
Max = 40

7

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 PTS]	<input type="checkbox"/> >5 cm - 10 cm [15 PTS]
<input type="checkbox"/> >22.5 - 30 cm [30 PTS]	<input type="checkbox"/> ≤5 cm [5 PTS]
<input checked="" type="checkbox"/> >10 - 22.5 cm [25 PTS]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS

MAXIMUM POOL DEPTH (centimeters)

16

Pool Depth
Max = 30

25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> >4.0 meters (>13') [30 PTS]	<input type="checkbox"/> >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
<input checked="" type="checkbox"/> >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]	<input type="checkbox"/> ≤1.0 m (≤3' 3") [5 PTS]
<input type="checkbox"/> >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

2.5

Bankfull
Width
Max = 30

25

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments				Conservation Tillage	
				Urban or Industrial	
				Open Pasture, Row Cr	
				Mining or Construction	

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

Comments

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☒ Flat to Moderate ☐ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**Stream 1**QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Scioto River Distance from Evaluated Stream 25 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSGS Quadrangle Name: North Lewisburg NRCS Soil Map Page: WSS NRCS Soil Map Stream Order 2ndCounty: Champaign Township/City: _____**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 9/27/2017 Quantity: 0.08 in.Photograph Information: upstream and downstreamElevated Turbidity? (Y/N): N Canopy (% open): 100%Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)

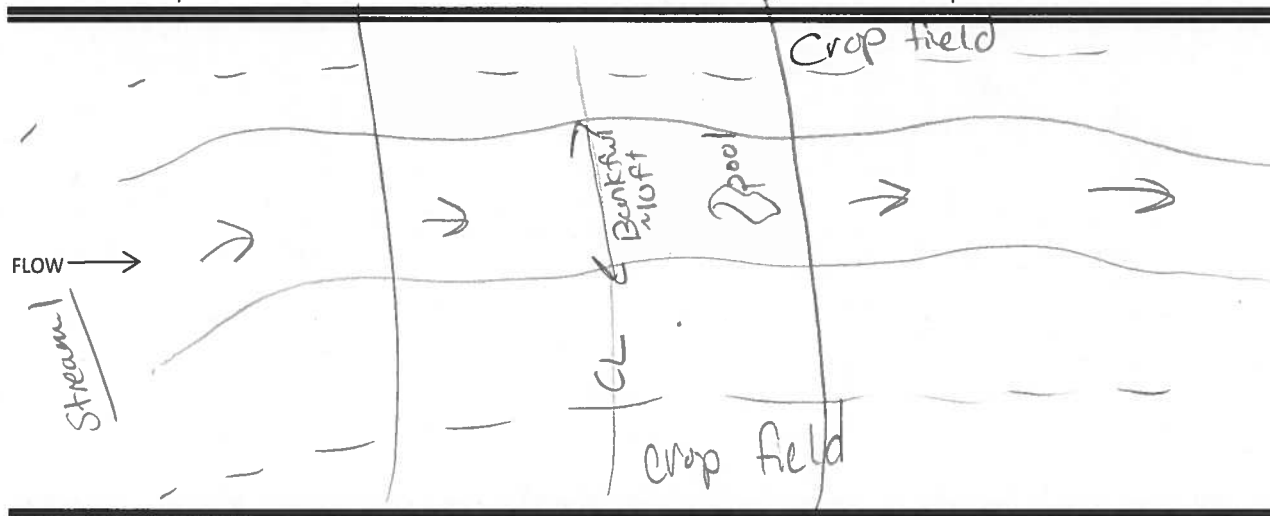
Fish observed? (Y/N) _____ Voucher(Y/N) _____ Salamander Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher(Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location





ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

Stream 2

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

- ☒ WWH Name: Scioto River Distance from Evaluated Stream 24.53 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: North Lewisburg NRCS Soil Map Page: WSS NRCS Soil Map Stream Order 1st

County: Champaign Township/City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 9/27/2017 Quantity: 0.08 in.

Photograph Information: upstream and downstream

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)

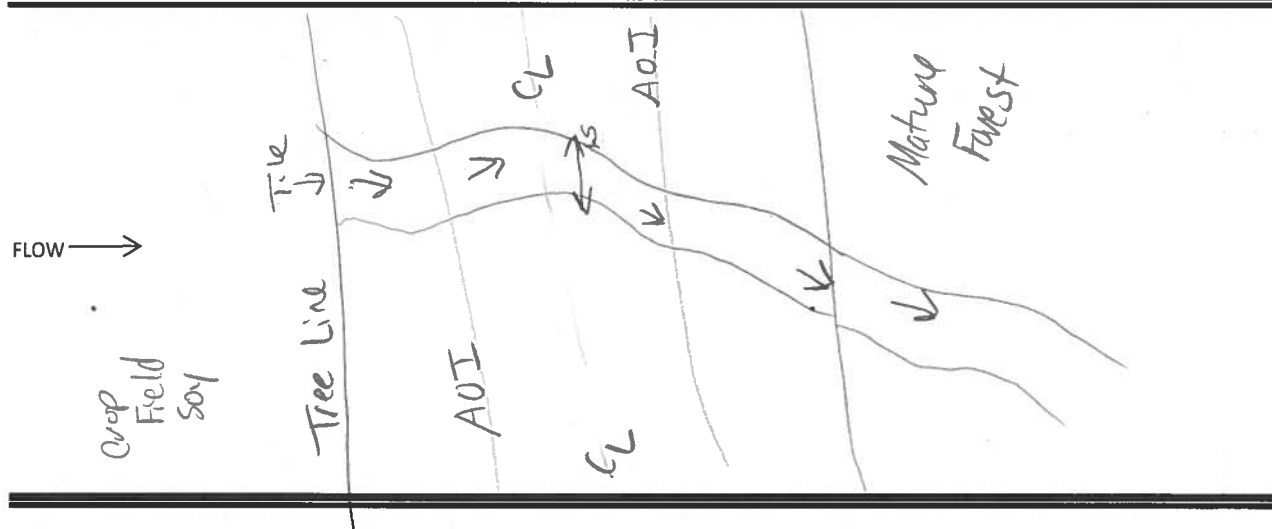
Fish observed? (Y/N) _____ Voucher(Y/N) _____ Salamander Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location





Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

32

SITE NAME/LOCATION Everpower Site Access Road Shift - T94 to S Parkview Rd

SITE NUMBER Stream 3 RIVER BASIN Little Darby Creek DRAINAGE AREA (mi²) 0.03 sm

LENGTH OF STREAM REACH (ft) 237 LAT. 40.091 LONG. -83.573 RIVER CODE RIVER MILE

DATE 9/29/2017 SCORER C.Jansing/A.Cameron COMMENT: River Code: 050160001210070

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL
MODIFICATIONS☒ None / Natural Channel ☐ Recovered ☐ Recovering ☐ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B)

TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 PTS]	
<input type="checkbox"/> BOULDER (>256 mm) [16 PTS]	
<input type="checkbox"/> BEDROCK [16 PTS]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 PTS]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 PTS]	5
<input checked="" type="checkbox"/> SAND (<2 mm) [6 PTS]	15

TYPE	PERCENT
<input checked="" type="checkbox"/> SILT [3 PTS]	80
<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	
<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> CLAY or HARDPAN [0 PTS]	
<input type="checkbox"/> MUCK [0 PTS]	
<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of
Blr Slabs, Boulder, Cobble, Bedrock

0

(A)

9

(B)

3

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
PointsSubstrate
Max = 40

12

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

☐ >30 centimeters [20 PTS]
☐ >22.5 - 30 cm [30 PTS]
☐ >10 - 22.5 cm [25 PTS]☐ >5 cm - 10 cm [15 PTS]
☐ ≤5 cm [5 PTS]
☒ NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS

MAXIMUM POOL DEPTH (centimeters)

3

Pool Depth
Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

☐ >4.0 meters (>13') [30 PTS]
☐ >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]
☒ >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]☐ >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
☐ ≤1.0 m (≤3' 3") [5 PTS]

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

1.5

Bankfull
Width
Max = 30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH
(Per Bank)

L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Wide >10 m
Moderate 5 - 10 m
Narrow <5 m
None

Comments

FLOODPLAIN QUALITY
(Most Predominant per Bank)

L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Mature Forest, Wetland
Immature Forest, Shrub or Old Field
Residential, Park, New Field
Fenced Pasture

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Conservation Tillage
Urban or Industrial
Open Pasture, Row Crop
Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☒ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)
Comments Hydrology from field tile

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☐ Flat to Moderate ☒ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**Stream 3**QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Scioto River Distance from Evaluated Stream 24.10 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSGS Quadrangle Name: North Lewisburg NRCS Soil Map Page: WSS NRCS Soil Map Stream Order 1stCounty: Champaign Township/City: _____**MISCELLANEOUS**Base Flow Conditions? (Y/N): Y Date of last precipitation: 9/27/2017 Quantity: 0.08 in.Photograph Information: upstream and downstreamElevated Turbidity? (Y/N): N Canopy (% open): 0%Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATIONPerformed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)

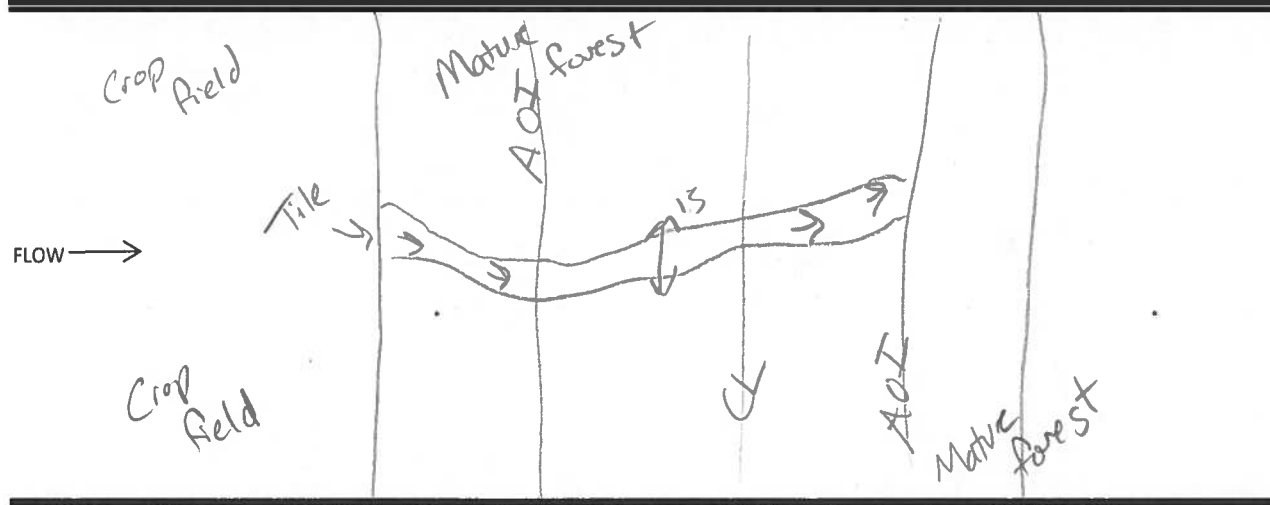
Fish observed? (Y/N) _____ Voucher(Y/N) _____ Salamander Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher(Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location



ADDITIONAL STREAM INFORMATION (This information must also be completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ If Yes, Attach Completed QHEI Form**DOWNSTEAM DESIGNATED USE(S)**

☒ WWH Name Scioto River Distance from Evaluated Stream 25.79 miles
☐ CWH Name _____ Distance from Evaluated Stream _____
☐ EWH Name _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSQS Quadrangle Name North Lewisburg NRCS Soil Map Page Web Soil Survey NRCS Soil Map Stream Order 1stCounty Champaign Township/City _____**MISCELLANEOUS**Base Flow Conditions? ☒ Yes ☐ No Date of Last Precipitation 10/11/2017 Quantity 0.16 inPhotograph Information upstream and downstreamElevated Turbidity? ☐ Yes ☒ No Canopy (% open) 60%Were samples collected for water chemistry? ☐ Yes ☒ No (Note lab sample no. or id and attach results) Lab Number _____

Field Measures - Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? ☐ Yes ☐ No If not, please explain _____

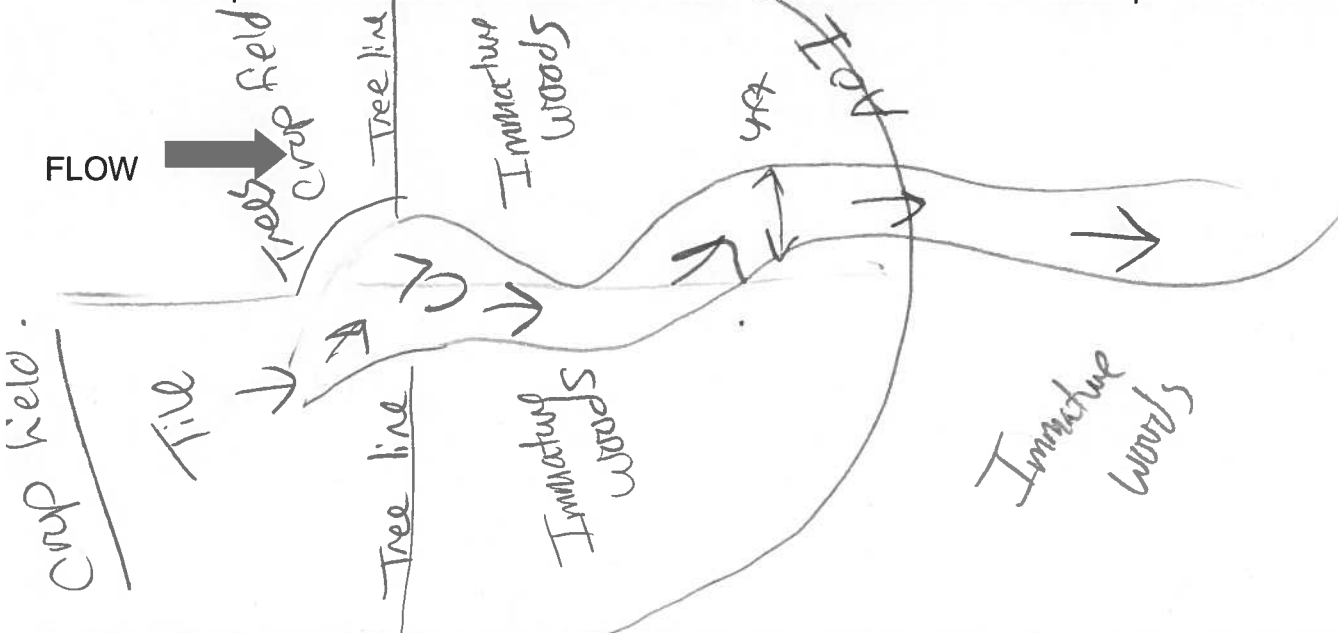
Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Salamanders Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ NoFrogs or Tadpoles Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Aquatic Macroinvertebrates Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No

Comments Regarding Biology _____

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.





Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3)

23

SITE NAME/LOCATION: Everpower South Parkview New Site

SITE NUMBER: Stream 5 RIVER BASIN: Proctor Run DRAINAGE AREA (mi²): 0.15 sm
LENGTH OF STREAM REACH (ft): 273 LAT.: 40.137 LONG.: -83.576 RIVER CODE: RIVER MILE:
DATE: 10/13/2017 SCORER: J.Thrash/A.Cameron COMMENT: River Code: 0506000121002-0

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS ☐ None / Natural Channel ☒ Recovered ☐ Recovering ☐ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 PTS]		<input checked="" type="checkbox"/> SILT [3 PTS]	30
<input type="checkbox"/> BOULDER (>256 mm) [16 PTS]		<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	70
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 PTS]		<input type="checkbox"/> CLAY or HARDPAN [0 PTS]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 PTS]		<input type="checkbox"/> MUCK [0 PTS]	
<input type="checkbox"/> SAND (<2 mm) [6 PTS]		<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of
Blldr Slabs, Boulder, Cobble, Bedrock 0

(A)

6

(B)

2

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
PointsSubstrate
Max = 40

8

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 PTS]	<input type="checkbox"/> >5 cm - 10 cm [15 PTS]
<input type="checkbox"/> >22.5 - 30 cm [30 PTS]	<input type="checkbox"/> ≤5 cm [5 PTS]
<input type="checkbox"/> >10 - 22.5 cm [25 PTS]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS: Isolated pools

MAXIMUM POOL DEPTH (centimeters)

0

Pool Depth
Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> >4.0 meters (>13') [30 PTS]	<input checked="" type="checkbox"/> >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
<input type="checkbox"/> >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]	<input type="checkbox"/> ≤1.0 m (≤3' 3") [5 PTS]
<input type="checkbox"/> >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]	

COMMENTS:

AVERAGE BANKFULL WIDTH (meters)

1.0

Bankfull
Width
Max = 30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH

L	R	(Per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10 m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5 - 10 m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5 m
<input type="checkbox"/>	<input type="checkbox"/>	None

Comments:

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L R

<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	Open Pasture, Row Cr
<input type="checkbox"/>	Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

Comments: Hydrology from field tile

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input checked="" type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☒ Flat to Moderate ☐ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ If Yes, Attach Completed QHEI Form**DOWNSSTREAM DESIGNATED USE(S)**

☒ WWH Name Scioto River Distance from Evaluated Stream 23.9 miles
☐ CWH Name _____ Distance from Evaluated Stream _____
☐ EWH Name _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSQS Quadrangle Name North Lewisburg NRCS Soil Map Page Web Soil Survey NRCS Soil Map Stream Order 1stCounty Champaign Township/City _____**MISCELLANEOUS**Base Flow Conditions? ☒ Yes ☐ No Date of Last Precipitation 10/11/2017 Quantity 0.16 inPhotograph Information upstream and downstreamElevated Turbidity? ☐ Yes ☒ No Canopy (% open) 10%Were samples collected for water chemistry? ☐ Yes ☒ No (Note lab sample no. or id and attach results) Lab Number _____

Field Measures - Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? ☐ Yes ☐ No If not, please explain _____

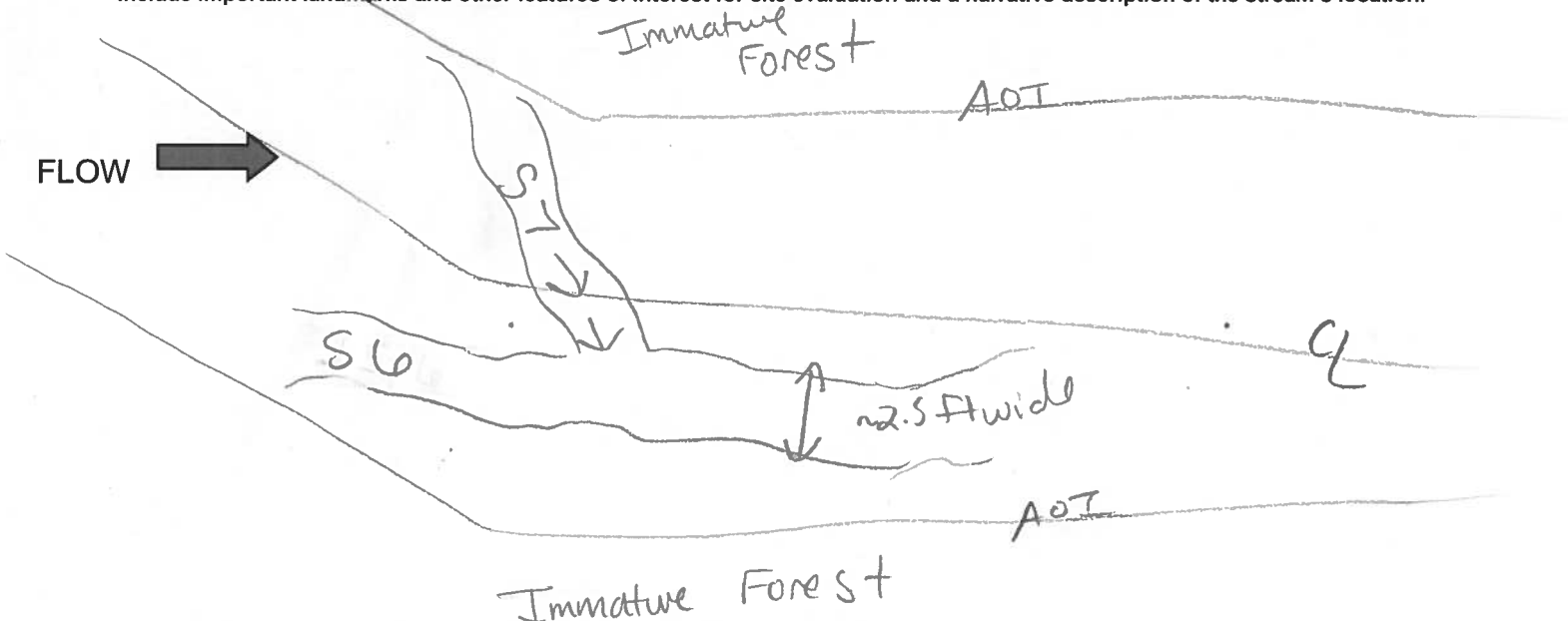
Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Salamanders Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ NoFrogs or Tadpoles Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Aquatic Macroinvertebrates Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No

Comments Regarding Biology _____

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.





Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3)

13

SITE NAME/LOCATION: Everpower South Parkview New Site

SITE NUMBER: Stream 6 RIVER BASIN: Proctor Run DRAINAGE AREA (mi²): 0.15 sm

LENGTH OF STREAM REACH (ft): 90 LAT.: 40.136 LONG.: -83.576 RIVER CODE: RIVER MILE

DATE: 10/13/2017 SCORER: J.Thrash/A.Cameron COMMENT: River Code: 050600012-1002 0

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS ☐ None / Natural Channel ☒ Recovered ☐ Recovering ☐ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 PTS]		<input checked="" type="checkbox"/> SILT [3 PTS]	30
<input type="checkbox"/> BOULDER (>256 mm) [16 PTS]		<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	70
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 PTS]		<input type="checkbox"/> CLAY or HARDPAN [0 PTS]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 PTS]		<input type="checkbox"/> MUCK [0 PTS]	
<input type="checkbox"/> SAND (<2 mm) [6 PTS]		<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0

(A)

6

(B)

2

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40

8

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 PTS]	<input type="checkbox"/> >5 cm - 10 cm [15 PTS]
<input type="checkbox"/> >22.5 - 30 cm [30 PTS]	<input type="checkbox"/> ≤5 cm [5 PTS]
<input type="checkbox"/> >10 - 22.5 cm [25 PTS]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS: Isolated pools

MAXIMUM POOL DEPTH (centimeters)

0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> >4.0 meters (>13') [30 PTS]	<input type="checkbox"/> >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
<input type="checkbox"/> >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]	<input checked="" type="checkbox"/> ≤1.0 m (≤3' 3") [5 PTS]
<input type="checkbox"/> >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]	

COMMENTS:

AVERAGE BANKFULL WIDTH (meters)

1.0

Bankfull Width Max = 30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH

L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Comments:

FLOODPLAIN QUALITY

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

Comments: Hydrology from field tile

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☒ Flat to Moderate ☐ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ If Yes, Attach Completed QHEI Form**DOWNSIDE DESIGNATED USE(S)**

☒ WWH Name Scioto River Distance from Evaluated Stream 23.9 miles
☐ CWH Name _____ Distance from Evaluated Stream _____
☐ EWH Name _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSQS Quadrangle Name North Lewisburg NRCS Soil Map Page Web Soil Survey NRCS Soil Map Stream Order 1stCounty Champaign Township/City _____**MISCELLANEOUS**Base Flow Conditions? ☒ Yes ☐ No Date of Last Precipitation 10/11/2017 Quantity 0.16 inPhotograph Information upstream and downstreamElevated Turbidity? ☐ Yes ☒ No Canopy (% open) 10%Were samples collected for water chemistry? ☐ Yes ☒ No (Note lab sample no. or id and attach results) Lab Number _____

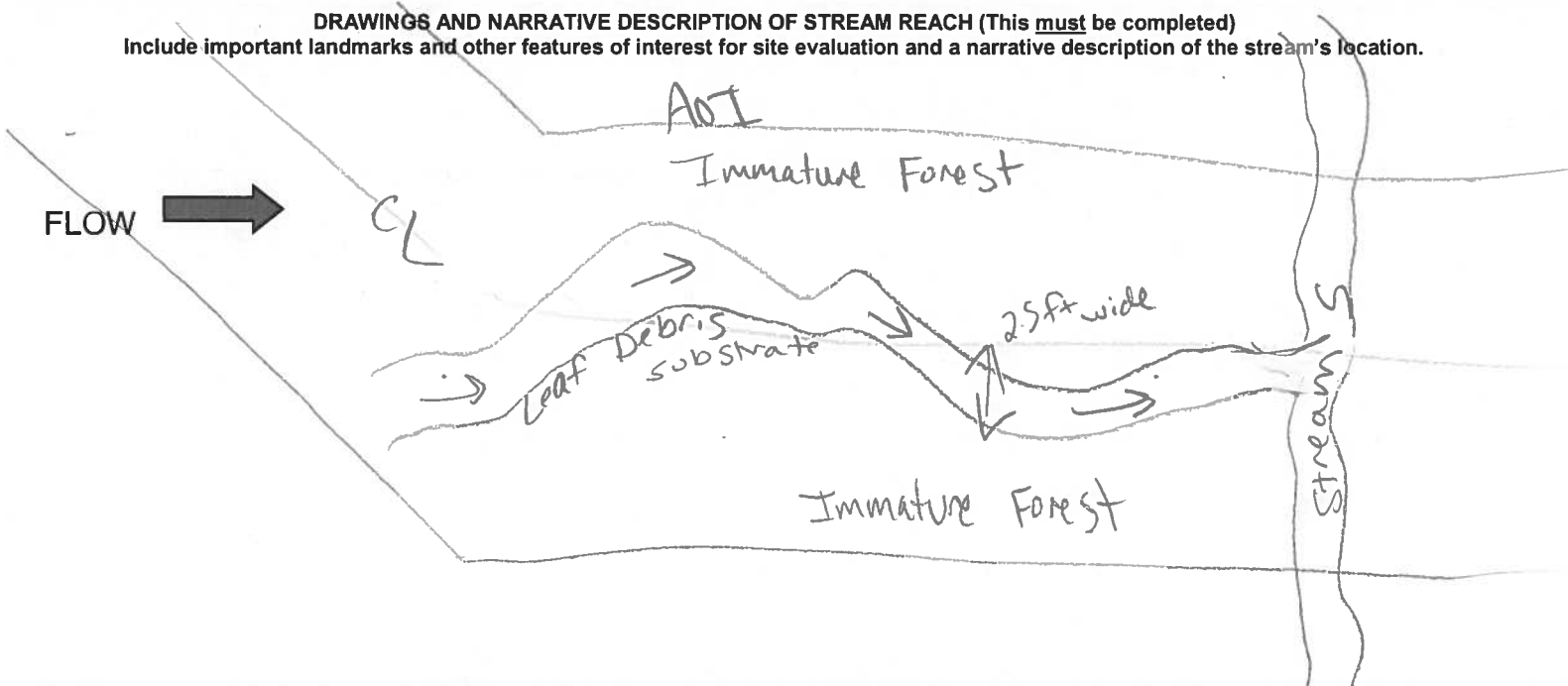
Field Measures - Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? ☐ Yes ☐ No If not, please explain _____

Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? ☐ Yes (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
☒ NoFish Observed? ☐ Yes Voucher? ☐ Yes Salamanders Observed? ☐ Yes Voucher? ☐ Yes
☐ No ☐ No ☐ No ☐ NoFrogs or Tadpoles Observed? ☐ Yes Voucher? ☐ Yes Aquatic Macroinvertebrates Observed? ☐ Yes Voucher? ☐ Yes
☐ No ☐ No ☐ No ☐ No

Comments Regarding Biology _____

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

13

SITE NAME/LOCATION: Everpower South Parkview New Site

SITE NUMBER: Stream 7 RIVER BASIN: Proctor Run DRAINAGE AREA (mi²): <0.01 sm
LENGTH OF STREAM REACH (ft): 34 LAT.: 40.136 LONG.: -83.576 RIVER CODE: RIVER MILE:
DATE: 10/13/2017 SCORER: J.Thrash/A.Cameron COMMENT: River Code: 0506000121002-0

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS ☐ None / Natural Channel ☒ Recovered ☐ Recovering ☐ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 PTS]		<input checked="" type="checkbox"/> SILT [3 PTS]	30
<input type="checkbox"/> BOULDER (>256 mm) [16 PTS]		<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	70
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 PTS]		<input type="checkbox"/> CLAY or HARDPAN [0 PTS]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 PTS]		<input type="checkbox"/> MUCK [0 PTS]	
<input type="checkbox"/> SAND (<2 mm) [6 PTS]		<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock 0

(A)

6

(B)

2

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
Points

Substrate
Max = 40

8

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 PTS]	<input type="checkbox"/> >5 cm - 10 cm [15 PTS]
<input type="checkbox"/> >22.5 - 30 cm [30 PTS]	<input type="checkbox"/> ≤5 cm [5 PTS]
<input type="checkbox"/> >10 - 22.5 cm [25 PTS]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS: Isolated pools

MAXIMUM POOL DEPTH (centimeters)

0

Pool Depth
Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> >4.0 meters (>13') [30 PTS]	<input type="checkbox"/> >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
<input type="checkbox"/> >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]	<input checked="" type="checkbox"/> ≤1.0 m (≤3' 3") [5 PTS]
<input type="checkbox"/> >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]	

COMMENTS:

AVERAGE BANKFULL WIDTH (meters)

0.7

Bankfull
Width
Max = 30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH

L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Comments:

FLOODPLAIN QUALITY

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

L	R
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

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<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

Comments: Hydrology from field tile

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☒ Flat to Moderate ☐ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed):QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ If Yes, Attach Completed QHEI Form**DOWNSIDE DESIGNATED USE(S)**

☒ WWH Name Scioto River Distance from Evaluated Stream 23.86 miles
☐ CWH Name _____ Distance from Evaluated Stream _____
☐ EWH Name _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSQS Quadrangle Name North Lewisburg NRCS Soil Map Page Web Soil Survey NRCS Soil Map Stream Order 1stCounty Champaign Township/City _____**MISCELLANEOUS**Base Flow Conditions? ☒ Yes ☐ No Date of Last Precipitation 10/11/2017 Quantity 0.16 inPhotograph Information upstream and downstreamElevated Turbidity? ☐ Yes ☒ No Canopy (% open) 10%Were samples collected for water chemistry? ☐ Yes ☒ No (Note lab sample no. or id and attach results) Lab Number _____

Field Measures - Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? ☐ Yes ☐ No If not, please explain _____

Additional comments/description of pollution impacts _____

BIOTIC EVALUATIONPerformed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Salamanders Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ NoFrogs or Tadpoles Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Aquatic Macroinvertebrates Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No

Comments Regarding Biology _____

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream location.

Attachment 5



Buckeye Amendment

Goshen, Rush, Union, and Wayne Townships
Champaign County, Ohio








Attachment 5. Delineated Wetland and Streams

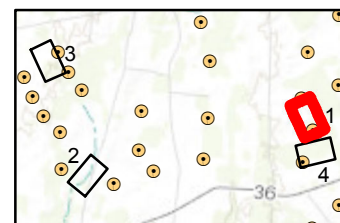
Sheet 1 of 4

Notes: 1. Basemap: USDA NAIP "2015 Ohio 0.5m" orthoimagery map service.

2. This map was generated in ArcMap on November 30, 2017.

3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

-  Wind Turbine
-  Delineated Stream
-  Collection Line
-  Access Road
-  Delineated Wetland
-  Substation
-  Township Boundary



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Buckeye Amendment

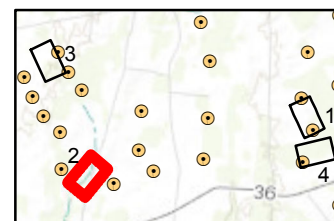
Goshen, Rush, Union, and Wayne Townships
Champaign County, Ohio

Attachment 5. Delineated Wetland and Streams

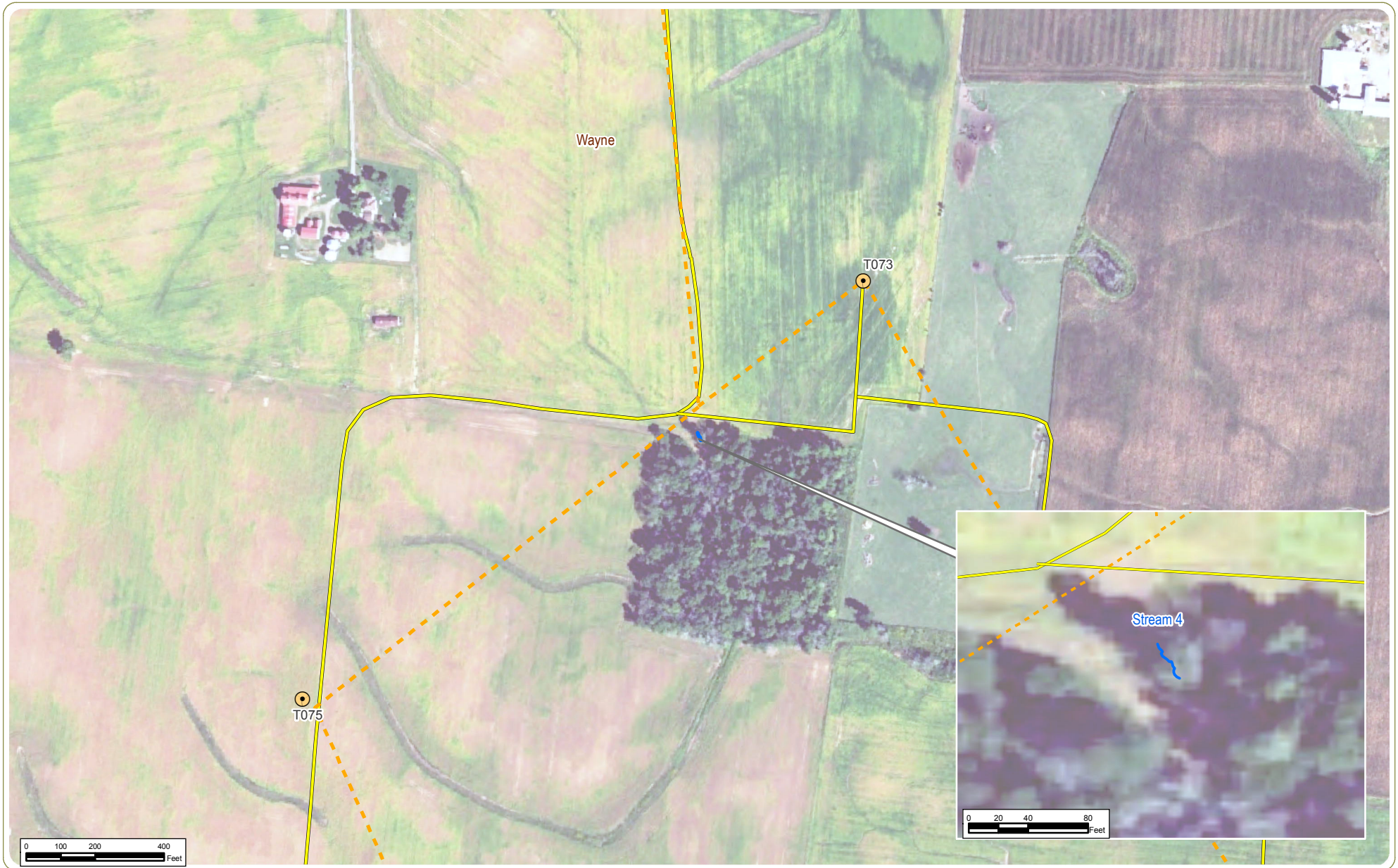
Sheet 2 of 4

- Notes: 1. Basemap: USDA NAIP "2015 Ohio 0.5m" orthoimagery map service.
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- Wind Turbine
- Delineated Stream
- Collection Line
- Access Road
- Delineated Wetland
- Substation
- Township Boundary



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Buckeye Amendment

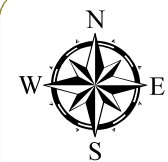
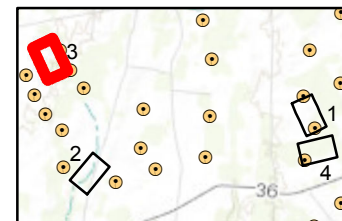
Goshen, Rush, Union, and Wayne Townships
Champaign County, Ohio

Attachment 5. Delineated Wetland and Streams

Sheet 3 of 4

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- Wind Turbine
- Delineated Stream
- Collection Line
- Access Road
- Delineated Wetland
- Substation
- Township Boundary



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Buckeye Amendment

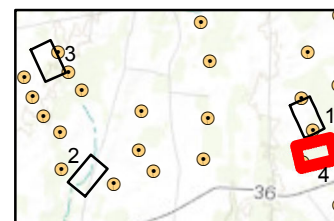
Goshen, Rush, Union, and Wayne Townships
Champaign County, Ohio

Attachment 5. Delineated Wetland and Streams

Sheet 4 of 4

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- Wind Turbine
- Delineated Stream
- Collection Line
- Access Road
- Delineated Wetland
- Substation
- Township Boundary



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Commission of Ohio Docketing Information System on

12/22/2017 3:52:26 PM

in

Case No(s). 17-2516-EL-BGA, 17-2517-EL-BGA

Summary: Application Exhibit G - Wetland memo electronically filed by Mr. Ryan D. Elliott on behalf of Buckeye Wind LLC and Champaign Wind LLC