Construction Notice Fiddlestix Switch & Poston-Ross 138-kV Cut-In Project

PUCO Case 23-0122-EL-BNR

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Administrative Code Section 4906-6-05

Submitted by:
AEP Ohio Transmission Company, Inc.

February 17, 2023

Construction Notice

AEP Ohio Transmission Company, Inc.
Fiddlestix Switch and Poston-Ross 138-kV Cut-In Project

4906-6-05

AEP Ohio Transmission Company, Inc. (the "Company") provides the following information in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(B) General Information

B(1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Construction Notice.

The Company is proposing the Fiddlestix Switch and Poston-Ross 138-kV Cut-In Project (the Project), in Vinton County, Ohio. The Project is necessitated by a request from Buckeye Power, Inc., on behalf of South Central Power ("SCP") for a new delivery point from the Poston-Ross 138-kV transmission line. The Project involves cutting into the Poston-Ross 138-kV transmission line and installing a new three-way phase-over-phase (PoP) switch (the "Fiddlestix Switch"). The Project will utilize new easements. The overall project will also require a 1.5-mile greenfield 138 kV transmission line, which will connect the Poston-Ross 138 kV transmission line, Fiddlestix Switch, and SCP's, non-jurisdictional, distribution stepdown Ilesboro Station, and filed with the OPSB under separate cover (Case No. 23-0123-BLN).

The location of the Project is shown on Figure 1 and 2 in Appendix A.

The Project meets the requirements for a Construction Notice Application (CN) because it is within the types of projects defined by item 2(a) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix For Electric Power Transmission Lines:

(2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure, for a distance of:

(a) Two miles or less.

The Project has been assigned Public Utilities Commission of Ohio (PUCO) Case No. 23-0122-EL-BNR

B(2) Statement of Need

If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

Buckeye Power, Inc. on behalf of SCP requested the Company provide a new 138-kV delivery point on the Poston-Ross 138-kV transmission line for their new Ilesboro Station. SCP load is 3.5 MW and it is projected to peak in the following several years, which could cause the loading at the SCP's Ilesboro Station to reach 7 MW. Ilesboro Station will also serve as the backup for SCP's Gibisonville Station. The scope of this project entails tapping AEP's Poston-Ross 138 kV transmission line, installing a three-way phase-over-phase motor operated air break (MOAB) switch, and revenue metering at Ilesboro Station. From the switch approximately 1.5 miles of greenfield 138 kV transmission line will be built, known as the Fiddlestix Switch - Ilesboro South Central Power 138 kV, terminating at the SCP's Ilesboro Substation.

Failure to move forward with the proposed project will result in the inability to serve SCP load expectations as well as failing to address the reliability concerns experienced by SCP related to their existing distribution service.

The need and solution for the entire project was presented and reviewed with stakeholders at the July 2019 and March 2020 PJM SRRTEP meetings. The project was subsequently assigned PJM supplemental number s2222. This Project was included in the Company's 2022 Long Term Forecast Report, and is located on page 184, see Appendix B.

B(3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The Project is located in Vinton County, Ohio. Figure 1 in Appendix A shows the location of the proposed Project in relation to the existing utility infrastructure in the area.

B(4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The Company considered two switch locations for the overall project. The selected switch location reduces tree clearing, access road length, and was preferred by the property owner. The selected greenfield route is the most direct alternative while reducing environmental impacts, access road impacts, and was preferred by the property owner along the greenfield extension.

The preferred location of the Project was dictated by existing infrastructure, the proposed placement of the Ilesboro Station, minimizing impacts to property owners by locating the greenfield extension along property boundaries and edges of fields, and minimizes impacts to the environment by avoiding tree clearing and impacts to streams and wetlands to the extent practicable. The preferred location of the Project

minimizes impacts to the community and the environment, and represents the most suitable location and most appropriate solution for meeting the Company's needs.

B(5) Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Company maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project. The Company also retains land agents who will discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction of the Project is planned to begin in May 2023, and the anticipated in-service date will be December 2023.

B(7) Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figure 1 in Appendix A provides the proposed Project area on a map of 1:24,000 scale (1 inch equals 2,000 feet), and provides the relevant locations of the Project on the United States Geological Survey (USGS) 7.5-minute topographic map of the New Plymouth and Zaleski quadrangles. Figure 2 in Appendix A show the Project area on ESRI World Imagery at a scale of 1:6,000-scale (1-inch equals 500 feet). The ESRI World Imagery is dated May 2021.

To visit the Project Site from Columbus, Ohio, take I-70 East for 4.9 miles. Then, take exit 105 to merge onto US-33 E/Southeast Expressway towards Lancaster. Continue for 44.2 miles until taking the OH-93 exit towards Logan. Then, turn left on OH-93 South and continue for 12.5 miles. The northern end of the Project Site is 0.2 miles south of where Fairview Ridge Road intersects OH-93. The approximate address of the Project Site is 23084 OH-93, Logan, OH 43138, at latitude 39.38998° longitude -82.45774°.

B(8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the

facility and a list of the additional properties for which such agreements have not been obtained.

A list of properties required for the Project are provided in the table below.

Parcel ID	Agreement Type	Easement Agreement Obtained (Yes/No)
14-00045.000	New Easement	No
1400504002	New Easement	No
1400046000	New Easement	No
1400504000	New Easement	No

B(9) Technical Features

The applicant shall describe the following information regarding the technical features of the project:

B(9)(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The transmission line cut-in is anticipated to include the following:

Voltage:	138kV
Conductors:	2x (3) 1033 KCMIL (Curlew) ACSR (54/7)
Static Wire:	(1) 0.646" 96 Ct OPGW & (1) 7#8 Aluminum Clad Steel
Insulators:	Polymer
ROW Width:	100 feet
Structure Type:	One (1) Two-Pole Double circuit, Steel monopole Self Support Deadend

The Fiddlestix Switch is anticipated to include the following:

Voltage:	138kV
Conductors:	2x (3) 1033 KCMIL (Curlew) ACSR (54/7) & 1x (3) 336 KCMIL (Oriole) ACSR (30/7)
Static Wire:	One (1) 0.646" 96 Ct OPGW & (1) 7#8 Aluminum Clad Steel
Insulators:	Polymer
ROW Width:	100 feet & 80 feet
Structure Type:	One (1) Phase-over-Phase, Self-Supported, 3-Way Switch Pole

B(9)(b) Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

No occupied residences or institutions are located within 100 feet of the Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $1.5 million using a Class 4 estimates. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company Inc.'s FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Ecological Impacts

The applicant shall describe the social and ecological impacts of the project:

B(10)(a) Land Use Characteristics

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

Aerial photographs of the Project vicinity are provided as Figure 2 in Appendix A. The Project is located within Swan Township, Vinton County. The Project location and vicinity are rural in nature and land use is primarily of non-maintained forest and scrub-shrub vegetation with lesser extents of old field, grassland, agriculture, and scattered rural residential.

B(10)(b) Agricultural Land Information

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

The Vinton County Auditor maintains an online database of agricultural district land in Swan Township. Vinton County was consulted on January 13, 2023, and there were no parcels within the Project ROW identified as agricultural district lands. As this Project is intended to replace existing transmission line infrastructure, including transmission poles, no new agricultural districts or other agricultural land uses would be converted as a result of the Project.

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The Company's consultant completed Phase I Archaeological and Phase I History/Architectural surveys to be coordinated with the State Historic Preservation Office ("SHPO"). No archaeological sites were

documented within the Project area, and no historic properties listed or eligible for listing in the National Register of Historic Places were identified. Coordination with the SHPO was initiated in October 2020. The Company's consultant recommended that the Project will have no adverse effect on historic properties and no further cultural resource work would be necessary. On November 20, 2020, the SHPO concurred with these determinations and concluded that the Project would have no adverse effects on historic properties. The agency responses are provided in Attachment C.

B(10)(d) Local, State, and Federal Agency Correspondence

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHCD000005. The Company will also coordinate storm water permitting needs with local government agencies, as necessary. The Company will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion control sediment to protect surface water quality during storm events.

There are no other known local, state, or federal requirements that must be met prior to commencement of the proposed Project.

B(10)(e) Threatened, Endangered, and Rare Species

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Coordination with the Ohio Department of Natural Resources (ODNR) and United States Fish and Wildlife Service (USFWS) was initiated in September 2022 during the planning stages of the Project to obtain records of protected species located in the vicinity of the Study Area. On September 21, 2022 and September 30, 2022, the USFWS and ODNR, respectively, replied to the emailed requests for records of protected species within an extended area around the Project Site. The agency responses are provided in Attachment C.

The USFWS stated that the Project lies within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*), both of which can be present in woodlands and forest stands. The ODNR responded identifying state threatened and endangered species that may occur in the project vicinity. These species include four state endangered bat species: Indiana Bat, northern long-eared bat, little brown bat (*Myotis lucifugus*), tricolored bat (*Perimyotis subflavus*). The ODNR recommends that trees be conserved, but if they must be cut, mist net

and acoustic surveys should be conducted to determine the presence of these bat species. Due to the need for tree cutting to accommodate the Project, the Company completed a mist net survey for federal and state-listed bat species in July 2022. On August 15, 2022, the USFWS accepted the survey results and concurred that no Indiana bats or northern long-eared bats were identified in the Project area. Also on August 15, 2022, the DOW concurred that no Indiana bats, northern long-eared bats, little brown bats, or tricolored bats were identified in the Project area. Due to the absence of these listed bat species, they are not likely to be adversely affected by the Project and tree clearing may occur at any time of year.

In addition, ODNR identified one state-endangered mussel: the little spectaclecase (*Villosa lienosa*); three state-endangered fish: the northern brook lamprey (*Icthyomyzon fossor*), Ohio lamprey (*Icthyomyzon bdellium*), and the spotted darter (*Etheostoma maculatum*); and three state-endangered reptiles/amphibians: timber rattlesnake (*Crotalus horridus*), eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), and eastern spadefoot toad (*Scaphiopus holbrookii*); as well as the state-threatened midland mud salamander (*Pseudotriton montanus diastictus*). However, ODNR concluded that due to the location of the Project and the type of work proposed, the Project is not likely to impact any of these species.

B(10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

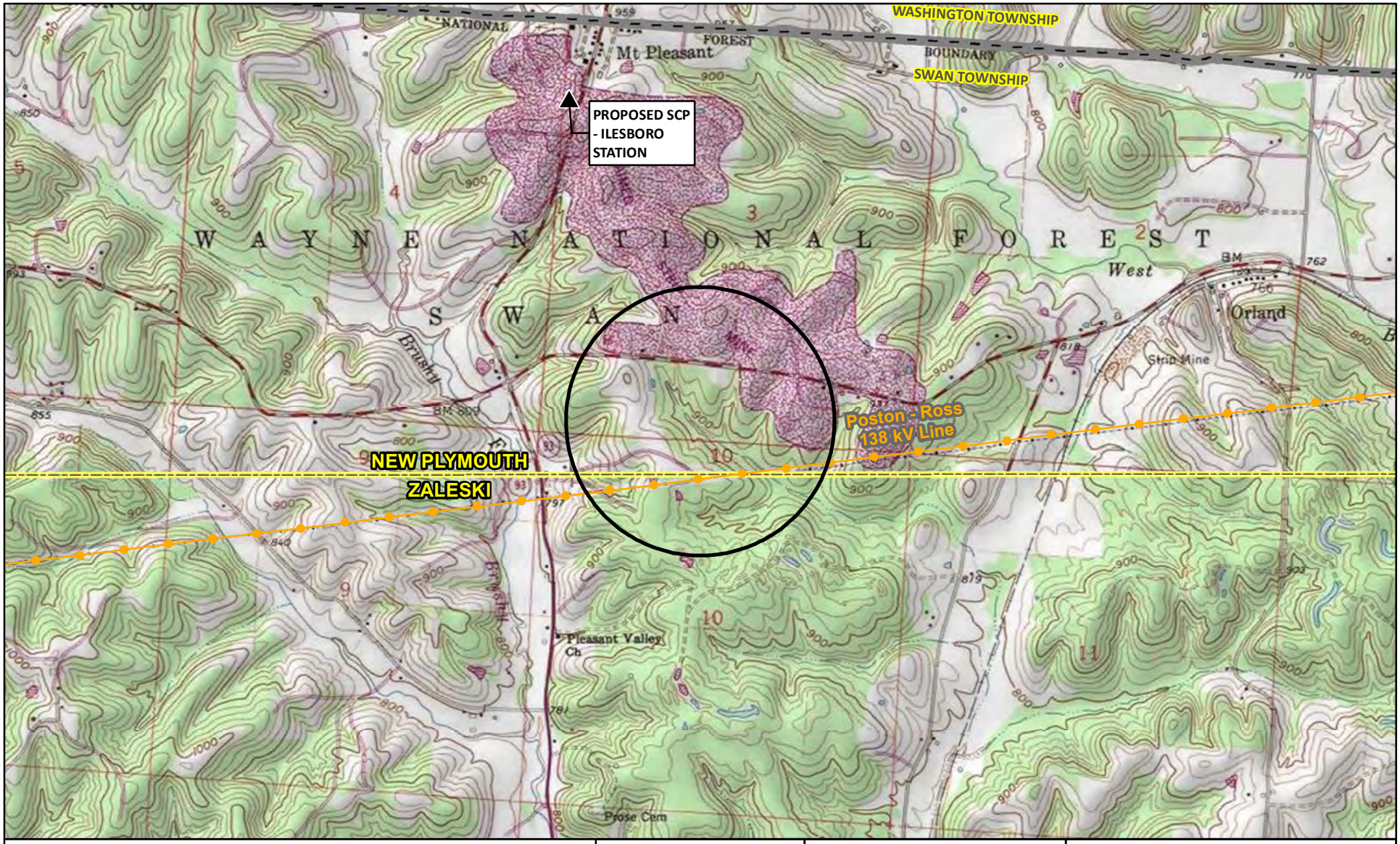
The Company's consultant prepared a Wetland Delineation and Stream Assessment Report, see Appendix D. The ecological survey of the Project identified three wetlands and two streams within the survey corridor. Two wetlands are classified as palustrine unconsolidated bottom (PUB) and one is classified as palustrine scrub-shrub (PSS). One stream is classified as Intermittent (INT) and one stream is classified as Ephemeral (EPH) . No temporary or permanent impact to the wetlands are anticipated for the Project.

B(10)(g) Unusual Conditions

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Figures



Legend

- Proposed Station
- Township Boundary
- USGS 7.5' Topographical Quadrangle
- Existing Transmission Line (138-kV)
- Project Area

Data Sources: AEP (2022), ESRI (2013), USGS 7.5' Topographic Quadrangle (New Plymouth and Zaleski)

Coordinate System: State Plane Ohio South NAD 83

February 14, 2023

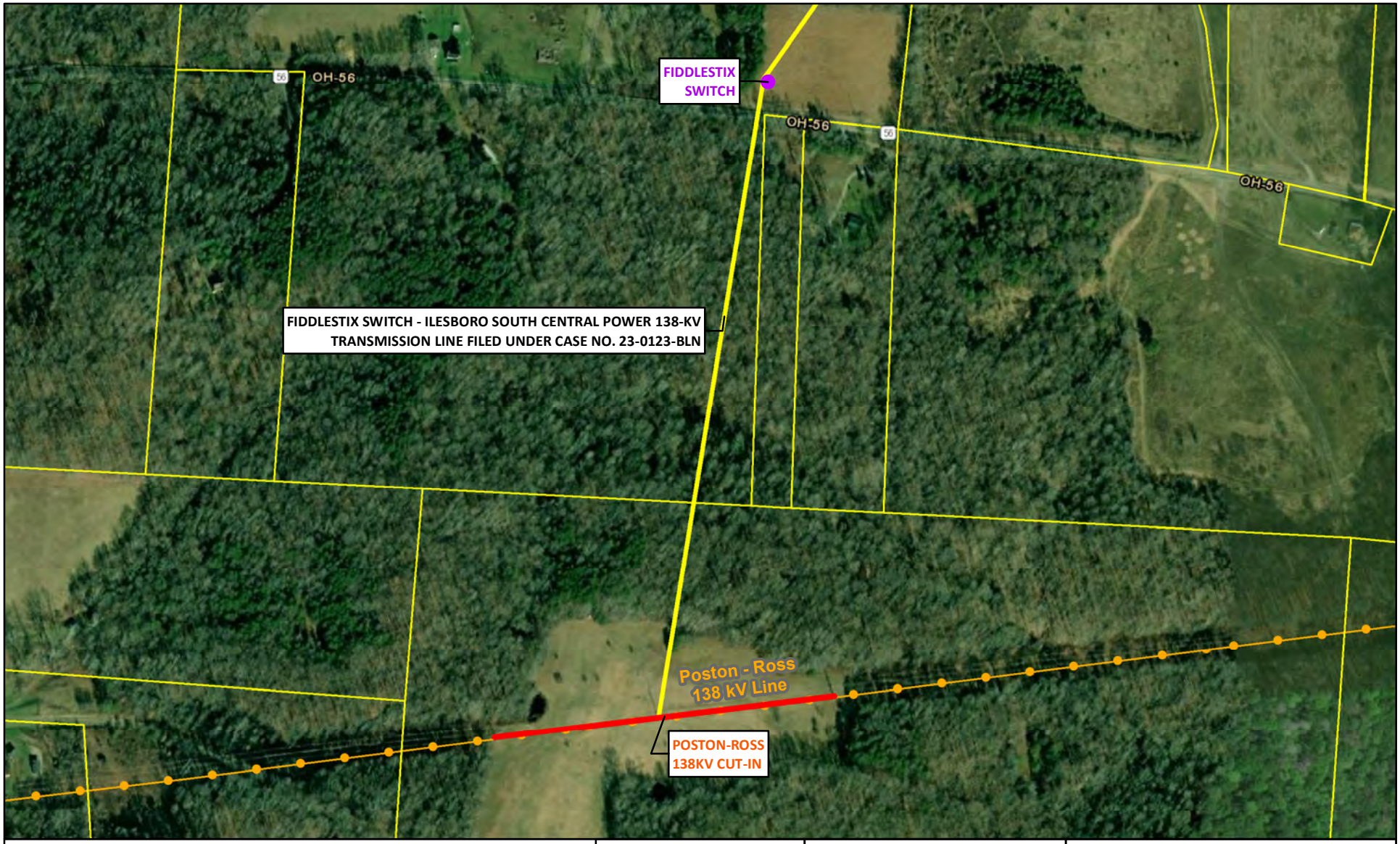
FIGURE 1
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch and Poston-Ross 138-kV Transmission Line Cut-In Project

0 1,000 2,000 3,000 4,000

Feet



Legend

- Switch Structure
- Existing Transmission Line (138-kV)
- Poston-Ross 138-kV T-Line Cut In
- Fiddlestix Switch - Ilesboro South Central Power 138-kV Transmission Line
- Parcel Boundary

Data Sources: AEP (2022), ESRI (2013),

Coordinate System: State Plane Ohio South NAD 83

February 14, 2023

FIGURE 2
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch and Poston-Ross 138-kV Transmission Line Cut-In Project

0 400 800

Feet

Appendix B PJM Submittal and Long Term Forecast Report

PUCO Form FE-T9:
AEP Ohio
Specifications of Planned Transmission Lines

1	**LINE NAME AND NUMBER:**	Fiddlestix Switch - Ilesboro 138kV (s2222 TP2019260)
2	**POINTS OF ORIGIN AND TERMINATION**	Fiddlestix Switch - Ilesboro INTERMEDIATE STATIONS - N/A
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	1.5 mi / 100 ft / 1 circuit
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	5/5/2022
6	**CONSTRUCTION:**	2023 - 2024
7	**CAPITAL INVESTMENT:**	$3.3M
8	**PLANNED SUBSTATION:**	Fiddlestix Switch
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Service to new customer delivery point
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	New customer load would not have service in required timeframe
13	**MISCELLANEOUS:**	

AEP Transmission Zone M-3 Process
Service to Ilesboro (65-91) 138kV

Need Number: AEP-2019-OH044

Process Stage: Solutions Meeting 03/19/2020

Previously Presented:

Need Meeting 7/24/2019

Supplemental Project Driver:

Customer Service

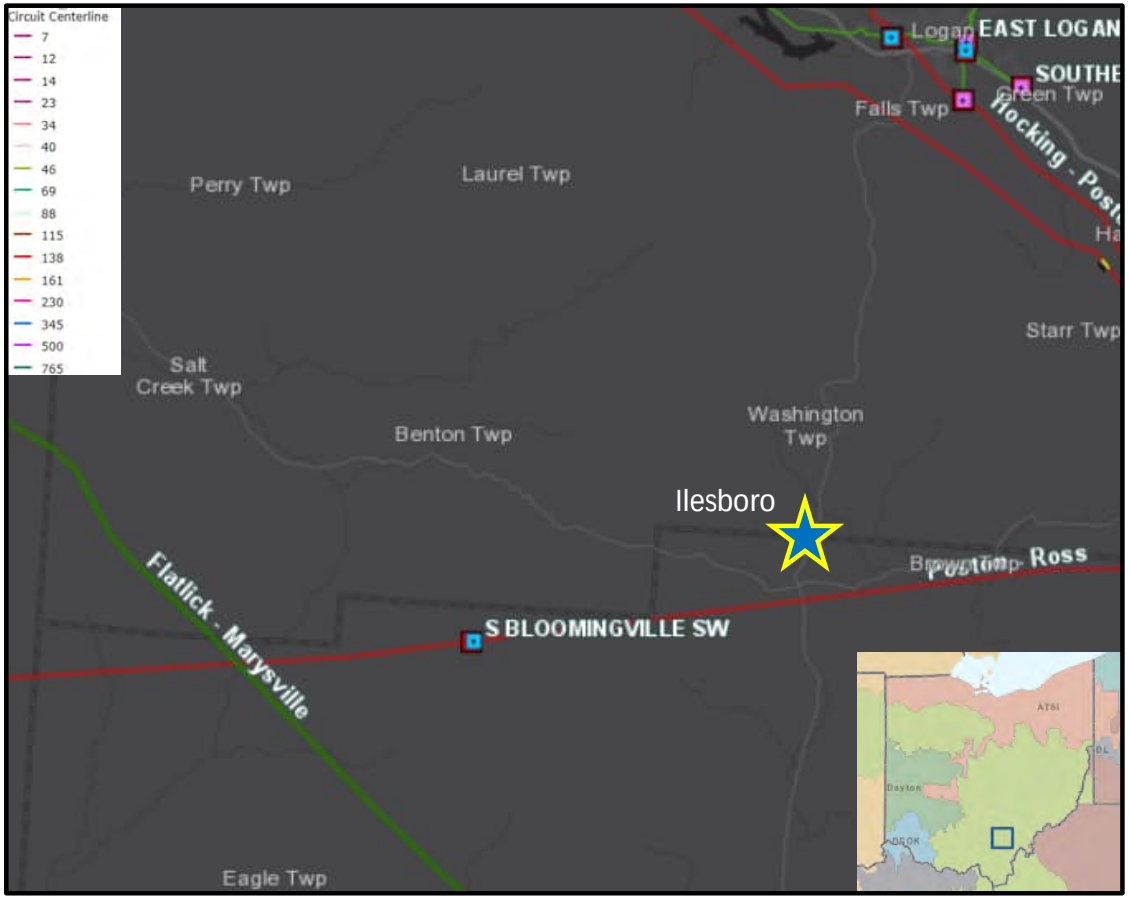
Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions slide 7)

Problem Statement:

- South Central Power is requesting a new 138kV delivery point on the Lemaster – Ross 138 kV circuit by September 2020. Anticipated load is about 4 MW.

Model: 2023 Summer RTEP



AEP Transmission Zone M-3 Process
Service to Ilesboro (65-91) 138kV

Need Number: AEP-2019-OH044

Process Stage: Solutions Meeting 03/19/2020

Proposed Solution:

- Build a new single circuit 138 kV line (~1.5 mi) to connect the new Ilesboro delivery point to the Lemaster - Ross 138kV circuit using 336.4 ACSR. Estimated Cost: $4.3M
- Install a new 3-way phase over phase 138 kV 2000 A switch (Fiddlestix) with MOABs on the Lemaster – Ross 138kV circuit. Update remote end work at Lemaster. Estimated Cost: $0.9M

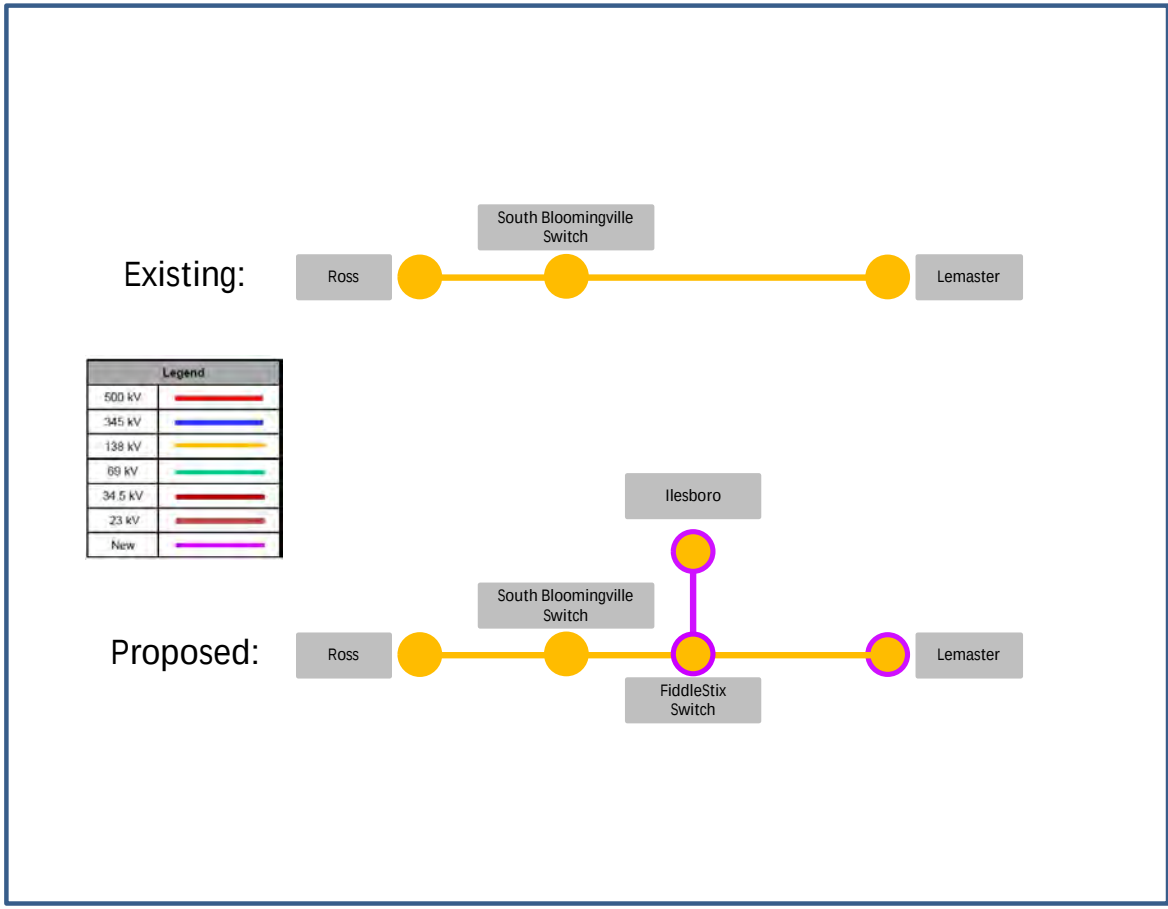
Total Estimated Transmission Cost: $5.2M

Alternatives Considered:

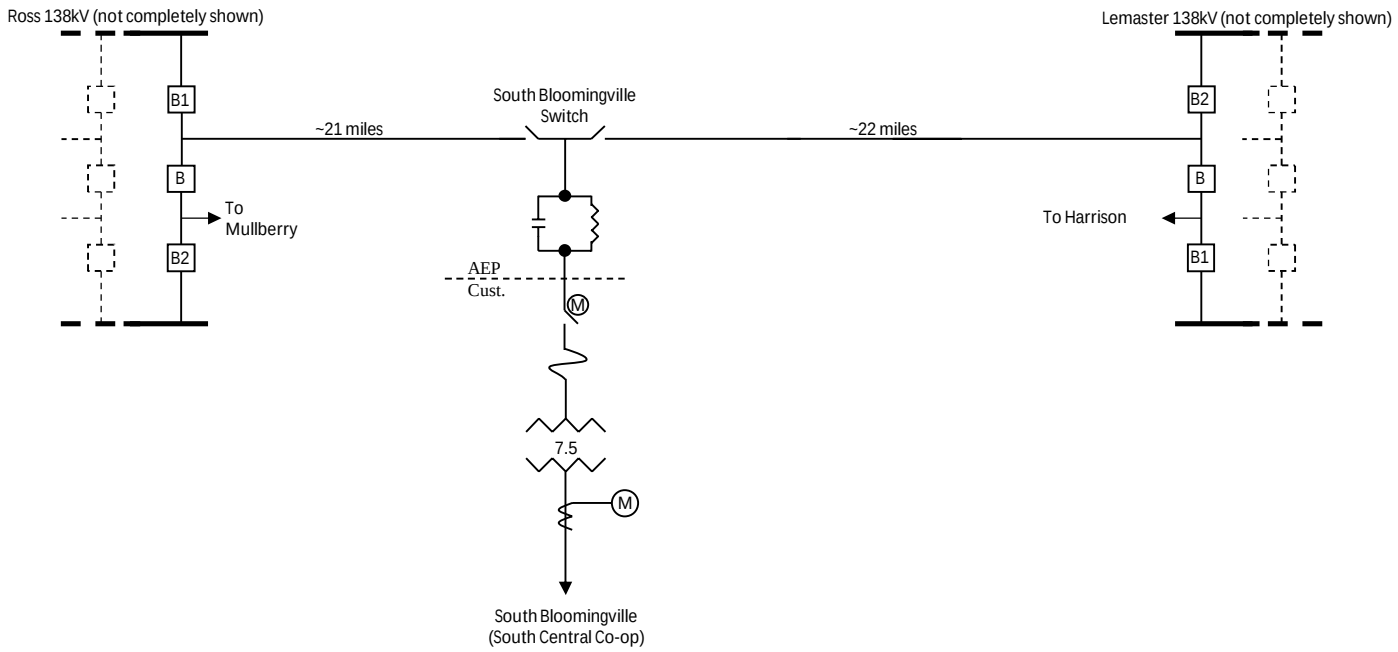
- No viable cost-effective transmission alternative was identified due to the location and timing of the customer request.

Projected In-Service: 12/01/2022

Project Status: Engineering

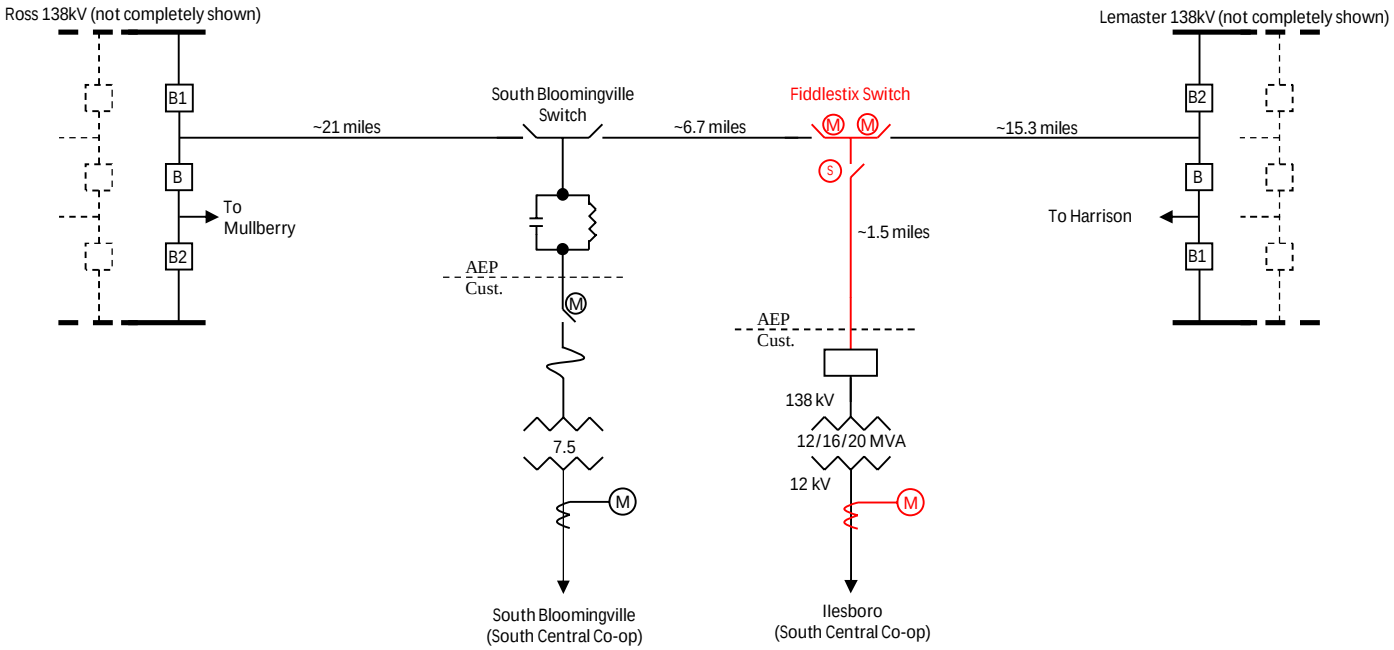


AEP Transmission Zone M-3 Process
Service to Ilesboro (65-91) 138kV



Notes:
- Point of interconnection is the first AEP structure outside of the customers station fence.

AEP Transmission Zone M-3 Process
Service to Ilesboro (65-91) 138kV



Appendix C Agency Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

September 21, 2022

Project Code: 2022-0076728

Reference: Fiddlestix Switch - Ilesboro South Central Power 138kV Transmission Line Project, Addendum 2, Vinton County, Ohio

Dear Ms. Apatang,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see https://ecos.fws.gov/ecp/species/9045), incidental take of Indiana bats is still prohibited without

a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.
If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

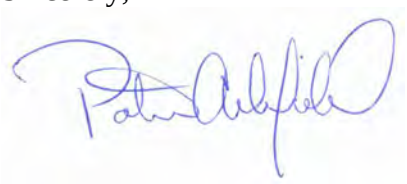
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

September 30, 2022

Hannah Apatang
AECOM
525 Vine Street
Suite 1800
Cincinnati, OH 45202

Re: 22-0880; Fiddlestix Switch-Ilesboro South Central Power Transmission Line Extension Project

Project: The project proposes to install approximately 1.8 miles of greenfield 138 kV transmission line to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit.

Location: The proposed project is located in Swan Township, Vinton County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species.

During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of little spectaclecase (*Villosa lienosa*), a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, and the spotted darter (*Etheostoma maculatum*), a state endangered fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect

hellbender habitat. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

FW: Bats Study Plan: AEP Fiddlestix

Amy J Toohey <ajtoohey@aep.com>
Mon 8/15/2022 1:35 PM

To: Cole A Bachtel <cabachtel@aep.com>;Anderson, Christy <Christy.Anderson@aecom.com>

Greetings:

Attached is ODNR's response for a complete set of approvals.

Thanks
Amy

From: Eileen.Wyza@dnr.ohio.gov <Eileen.Wyza@dnr.ohio.gov>
Sent: Monday, August 15, 2022 1:31 PM
To: Boyer, Angela <angela_boyer@fws.gov>; Natasha Brown <NBrown@envsi.com>
Cc: Amy J Toohey <ajtoohey@aep.com>; Dale W. Sparks <DSparks@envsi.com>; Nathan.Reardon@dnr.ohio.gov
Subject: RE: [EXTERNAL] Bats Study Plan: AEP Fiddlestix

Natasha,

The Ohio Division of Wildlife (DOW) has received the summer bat survey report for AEP's Fiddlestix Switch-Illesboro South Central 138kV Transmission Line project, conducted according to current U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources, Division of Wildlife guidance. No Indiana (*Myotis sodalis*), northern long-eared (*M. septentrionalis)*, little brown (*M. lucifugus*), or tricolored (*Perimyotis subflavus*) bats were detected, suggesting risk to these state-endangered species is low in the project area and tree cutting during summer maternity season is not likely to result in direct mortality of these species. Please contact DOW immediately should any bats be discovered. Should tree cutting need to occur after March 31, 2027, DOW recommends further consultation to reevaluate risk to these bat species.

This guidance does not constitute a full ODNR environmental review. If required, please contact the ODNR, Office of Real Estate Management to submit a request for agency environmental review coordination.

Thank you,

Eileen Wyza
Wildlife Biologist
Ohio Division of Wildlife
Phone: 614-265-6764
Email: Eileen.Wyza@dnr.ohio.gov

Support Ohio's wildlife. Buy a license at wildohio.gov.

From: Boyer, Angela <angela_boyer@fws.gov>
Sent: Monday, August 15, 2022 11:30 AM
To: Natasha Brown <NBrown@envsi.com>; Wyza, Eileen <Eileen.Wyza@dnr.ohio.gov>
Cc: Amy J Toohey <ajtoohey@aep.com>; Dale W. Sparks <DSparks@envsi.com>; Reardon, Nathan <Nathan.Reardon@dnr.ohio.gov>
Subject: Re: [EXTERNAL] Bats Study Plan: AEP Fiddlestix

Hello,

The USFWS response letter is attached.

Sincerely,
Angie

From: Natasha Brown <NBrown@envsi.com>
Sent: Monday, August 15, 2022 10:16 AM
To: Boyer, Angela <angela_boyer@fws.gov>; Wyza, Eileen <Eileen.Wyza@dnr.ohio.gov>

Cc: Amy J Toohey <ajtoohey@aep.com>; Dale W. Sparks <DSparks@envsi.com>
Subject: RE: [EXTERNAL] Bats Study Plan: AEP Fiddlestix

Greetings,

On behalf of American Electric Power (AEP), ESI is submitting a report summarizing listed bat studies associated with reference number **22-034** (AEP's Fiddlestix Switch-Illesboro South Central 138kV Transmission Line Project in Vinton County, Ohio). Mist netting was completed from 7 through 21 July 2022 and comprised 32 complete and 7 partial net nights of effort. In total, 67 bats were captured including 46 big brown (*Eptesicus fuscus*) and 21 eastern red (*Lasiurus borealis*). No protected bats were captured during netting.

The report is too large to send via email and is available through ESI' SharePoint site. The report can be accessed via the below link, please let me know if you are able to access the report:
Final Report

I will be happy to address any questions or comments you may have.
Thank you for your time,

Natasha Brown, PhD
Scientist
Environmental Solutions & Innovations, Inc.
4525 Este Ave. | Cincinnati, OH 45232 | USA
office: 513.451.1777 **fax:** 513.451.3321
NBrown@envsi.com | www.envsi.com

From: Boyer, Angela <angela_boyer@fws.gov>
Sent: Tuesday, June 28, 2022 3:14 PM
To: Dale W. Sparks <DSparks@envsi.com>; Wyza, Eileen <Eileen.Wyza@dnr.ohio.gov>
Cc: Jo Garofalo <JGarofalo@envsi.com>; Amy J Toohey <ajtoohey@aep.com>
Subject: Re: [EXTERNAL] Bats Study Plan: AEP Fiddlestix

Dale,

This is in response to your June 28, 2022, request for an amendment to Federal Fish and Wildlife Permit Numbers ES02373A-15 (ESI), ES120321-5 (John Timpone), TE56749B-4 (Patrick Moore), TE02167C-0 (James Gore), ES02365A-5 (Lynn Robbins) and ESPER0037601 (Jeremiah Van Deventer) to conduct a summer mist-net survey for AEP's AEP's Fiddlestix Switch-Illesboro South Central 138kV Transmission Line Project in Vinton County, Ohio. This survey effort has been assigned the reference number **22-034**. Please include this project reference number in all correspondence to the U.S. Fish and Wildlife Service and the Ohio Division of Wildlife.

This email serves as site-specific authorization to proceed in accordance with your Federal permit requirements. Summer mist netting is authorized to occur between June 1 and August 15, 2022. All federal permittees must also have valid Ohio Scientific Collecting Permits and plans must also be reviewed and approved by the Ohio Division of Wildlife before any surveys take place. Please note that a federally permitted person must remain present at the mist net sites while they are being operated. This notification serves as written concurrence that Environmental Solutions and Innovations, John Timpone, Patrick Moore, James Gore, Lynn Robbins, and Jeremiah Van Deventer are authorized to proceed with the proposed bat survey. This survey serve as a presence/absence survey for the Indiana bat and northern long-eared bat.

By January 31, 2023, we request that you submit an annual report of your Ohio survey work to this office using the 2022 Midwestern U.S. Spreadsheet in electronic format. Be sure to include data for all sites even if no bats were detected.

Sincerely,
Angela Boyer
Endangered Species Coordinator for Ohio
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, Ohio 43230

From: Dale W. Sparks <DSparks@envsi.com>
Sent: Tuesday, June 28, 2022 10:34 AM
To: Wyza, Eileen <Eileen.Wyza@dnr.ohio.gov>; Boyer, Angela <angela_boyer@fws.gov>
Cc: Jo Garofalo <JGarofalo@envsi.com>; Amy J Toohey <ajtoohey@aep.com>
Subject: [EXTERNAL] Bats Study Plan: AEP Fiddlestix

Please find attached a study plan for AEP's Fiddlestix Switch to Illesboro South Transmission Line Project.

ESI's intent is to complete netting along the length of the project with a targeted start-date of 10 July.

ESI
Dale W. Sparks, Ph.D.
Principal Scientist
Environmental Solutions & Innovations, Inc.
4525 Este Avenue | Cincinnati, OH 45232 | USA
t: 513.451.1777 **f:** 513.451.3321 **c:** 513.503.2667
dsparks@envsi.com | www.envsi.com

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

August 15, 2022

TAILS#: 03E15000-2021-TA-0064

Dear Ms. Brown:

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

We have received your summer bat survey report for the subject project. The survey was conducted following current Service guidelines. No Indiana bats (*Myotis sodalis*) were captured/detected, demonstrating probable absence of Indiana bats in the project area. Currently, the Service has no known hibernacula or maternity roost records for northern long-eared bat (*Myotis septentrionalis*) in the vicinity of the project. Therefore, the 4(d) rule for the northern long-eared bat could be applied (see: https://ecos.fws.gov/ecp/species/9045). Tree clearing on the project site at any time of the year is unlikely to result in adverse impacts to Indiana bats and will not result in any unauthorized incidental take of northern long-eared bats. Negative Indiana bat summer surveys are valid for five years. Therefore, no tree clearing should occur on the site after March 31, 2027 without further coordination with this office.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant

species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

In reply, refer to
2020-VIN-49796

November 20, 2020

Mr. Ryan J. Weller
Weller & Associates, Inc.
1395 West Fifth Avenue
Columbus, Ohio 43212

RE: Fiddlestix Switch-Ilesboro South Central Power 138kV New Build Project, Swan Township, Vinton County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on October 22, 2020 regarding the proposed Fiddlestix Switch-Ilesboro South Central Power 138kV New Build Project in Swan Township, Vinton County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the 2.4 km (1.5 mi) Fiddlestix Switch-Ilesboro South Central Power 138kV New Build Project in Swan Township, Vinton County, Ohio* by Ryan J. Weller (Weller & Associates, Inc., 2020).

A literature review, visual inspection, and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no further archaeological survey is necessary.

The following comments pertain to the *History/Architecture Investigations for the for the 2.4 km (1.5 mi) Fiddlestix Switch-Ilesboro South Central Power 138kV New Build Project in Swan Township, Vinton County, Ohio* by Austin White (Weller & Associates, Inc., 2020).

A literature review and field survey were completed as part of the investigations. A total of sixteen (16) resources fifty years of age or older were identified within the Area of Potential Effects (APE) during the field survey. It is Weller's recommendation that the identified properties are not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendations regarding eligibility.

Based on the information provided, we agree that the project as proposed will have no effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org, or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1086003-1086004

Appendix D Wetland Delineation and Stream Assessment Report

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE

VINTON COUNTY, OHIO

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:

American Electric Power Ohio Transmission Company
8600 Smith Mill Road
New Albany, Ohio 43054

Prepared by:

AECOM

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60624128

February 2021 Revised March 2022

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1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to install approximately 1.8 miles of greenfield 138 kV transmission line in Vinton County, Ohio (Project). The greenfield route is to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit. Approximately 0.01 mile of 138 kV line on the existing Poston-Ross 138 kV Transmission Line is also included in the Project. The proposed Project is illustrated on **Figure 1**.

The purpose of the field survey was to assess the presence of wetlands and other Waters of the United States (WOTUS) within the Project. The Project consists of a 200-foot (ft) wide corridor (Project survey corridor) along the proposed 1.8-mile Ilesboro 138 kV transmission line, totaling approximately 45 acres in area. In addition to identifying the presence of wetlands and other WOTUS within the Project survey corridor, land uses were recorded to classify and characterize potential habitat for rare, threatened, and endangered species. This report will be used to assist AEP's efforts to identify potential WOTUS and rare, threatened and endangered species habitat present within the Project survey corridor to avoid and/or minimize impacts to those resources during construction activities. This report was revised in February 2022 to provide more accurate and updated stream and wetland classifications and categorizations since the vacatur of the EPA's 2020 Clean Water Act Section 401 Certification Rule (2020 Rule) on October 21, 2021.

2.0 METHODOLOGY

Prior to conducting field surveys, digital USDA NRCS soil surveys, USFWS NWI maps, USGS NHD, and USGS 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential wetlands and streams within the Project survey corridor. ODNR Division of Mineral Resources and Geological Survey (DMRGS) data was reviewed to identify potential winter hibernacula for the Indiana and northern long-eared bats and information regarding these findings is provided in Appendix G.

Field survey activities included recording the physical boundaries of observed water features using sub-meter capable EOS GNSS receivers in conjunction with ArcCollector application on iPad tablets. The GNSS data were imported into ArcMap GIS software, where it was reviewed, edited for accuracy, and compiled in a format suitable for transfer and use by AEP. Water features were delineated and assessed based upon the appropriate procedures detailed below. Land uses observed within the Project survey corridor were assigned a general classification based upon the principal land characteristics and vegetation cover of the location.

2.1 WETLAND DELINEATION

The Project survey corridor was evaluated according to the procedures outlined in the USACE *1987 Wetland Delineation Manual* (1987 Manual) (Environmental Laboratory, 1987 Manual) and the *Regional*

Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (EMP Regional Supplement) (USACE, 2012). The 1987 Manual and Regional Supplement define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are placed where one or more of these parameters give way to upland characteristics.

AECOM utilized the routine delineation method described in the 1987 Manual and EMP Regional Supplement that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.1.1 SOILS

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.1.2 HYDROLOGY

The 1987 Manual requires that an area be inundated or saturated to the surface for an absolute minimum of five percent of the growing season (areas saturated between 5% and 12.5% of the growing season may or may not be wetlands, while areas saturated over 12.5% of the growing season fulfill the hydrology requirements for wetlands). The Regional Supplement states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-inch depth) is 41 degrees Fahrenheit (^{o}F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The Regional Supplement also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (5 of 10 years, or 50% probability of recurrence) date of the last and first 28^{o} F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center reveals for Vinton County that past recorded data is insufficient for calculating the growing season. As such, the growing season information for the neighboring Jackson County was obtained. The National Weather Service WETS data reveals for Jackson County that in an average year, this period lasts from April 19 to October 21, or 185 days. In the Project area, five percent of the growing season equates to approximately nine days.

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the 1987 Manual and the Regional Supplement. Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as drainage patterns, geomorphic position, micro-topographic relief, and a positive facultative (FAC)-neutral test (USACE, 2012).

2.1.3 VEGETATION

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the U.S. Army Corps of Engineers *2016 National Wetland Plant List: Eastern Mountains and Piedmont Region* (Lichvar, et al, 2016), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE, 2012).

2.1.4 WETLAND CLASSIFICATIONS

Wetlands identified in the field were classified based on the naming convention found in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979). There are five main classes of wetlands and deepwater habitats, including: marine, estuarine, riverine, lacustrine, and palustrine (Cowardin classifications). Marine and estuarine wetlands are not found in the interior of the U.S. while riverine wetlands are typically delineated as streams (when there is an absence of vegetation within the channel). Lacustrine systems typically include dammed river channels and non-vegetated open water exceeding 20 acres. Palustrine systems, which includes non-tidal wetlands dominated by trees, shrubs, or emergent vegetation, are the primary wetland types which may be identified within the Project survey corridor. The possible palustrine wetland classification types are as follows:

PEM – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

PSS – Palustrine scrub/shrub wetlands are characterized by woody vegetation that is less than three inches diameter at breast height (DBH), and greater than 3.28 feet tall. The woody angiosperms (i.e. small trees

or shrubs) in this broad-leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.

PFO – Palustrine forested wetlands are characterized by woody vegetation that is three inches or more DBH, regardless of total height. These wetlands generally include an overstory of broad-leaved and needle-leaved trees, an understory or young saplings and shrubs, and an herbaceous layer.

PUB – Palustrine unconsolidated bottom wetlands include all open water wetlands and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Palustrine open water wetlands are characterized by the lack of large stable surfaces for plant and animal attachment.

For some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation is listed.

2.1.5 OHIO RAPID ASSESSMENT METHOD v. 5.0

The OEPA *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat for wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are resources that have been severely degraded or have had a limited potential for restoration or are of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and are considered functioning, diverse, and healthy water resources that have ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have “...superior habitat, or superior hydrological or recreational functions.” They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit “superior” hydrologic functions (e.g., flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.2 STREAM ASSESSMENT

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and “designated uses” to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Clean Water Act requires knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an OHWM. The USACE defines OHWM as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (USACE, 2005).

Stream assessments were conducted using the methods described in the OEPA’s Methods for Assessing Habitat in Flowing Waters: Using OEPA’s Qualitative Habitat Evaluation Index (Rankin, 2006) and in the OEPA’s Field Methods for Evaluating Primary Headwater Streams in Ohio (OEPA, 2018). Streams assessed in the Project survey corridor were reviewed for existing OEPA Aquatic Life Use Designations per OEPA’s Water Quality Standards (OAC Chapter 3745-1). Those without an existing use designation were assigned a provisional aquatic life use designation based upon habitat assessment results (Rankin,

1989). Flow regime (ephemeral, intermittent, perennial) was determined by the appropriate stream assessment score per OEPA manuals (OEPA, 2018) and by AECOM's professional judgement.

Due to the vacatur of the EPA's 2020 Clean Water Act Section 401 Certification Rule (2020 Rule) on October 21, 2021, the preliminary determinations of jurisdictional status for some previously delineated streams and wetlands have been updated. These changes and others, such as changes in classification where applicable, are discussed in detail in this report.

2.2.1 OEPA QUALITATIVE HABITAT EVALUATION INDEX

The QHEI is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (e.g., macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 15.7 inches, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

2.2.2 OEPA PRIMARY HEADWATER HABITAT EVALUATION INDEX

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The headwater habitat evaluation index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater (PHW) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use the HHEI, the stream must have a "defined bed

and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 square mile, and a maximum depth of water pools equal to or less than 15.75 inches" (OEPA, 2018). Pool depth and water volume of headwater streams are normally insufficient to fully support the biological criteria associated with other sub-categories of aquatic life described OAC 3745-1-07.

Headwater streams are scored based on channel substrate composition, bankfull width, and maximum pool depth. Assessment results in a score (0 to 100) that is converted to a specific PHW stream type. Streams that are scored from 0 to 29 are typically identified as "Class I PHW streams", 30 to 70 are "Class II PHW streams", and 71 to 100 are "Class III streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. A decision-making flow chart was used to determine appropriate PHW stream classifications per OEPA Guidelines (OEPA, 2018). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream type.

Class I PHW Streams: Class I PHW Streams are those that have "normally dry channels with little or no aquatic life present" (OEPA, 2018). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class II PHW Streams: Class II PHW Streams are equivalent to "warmwater habitat" streams and exhibit intermittent or perennial flow. This stream class has a "moderately diverse community of warmwater adapted native fauna either present seasonally or year-round" (OEPA, 2018). The species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering and/or temperature facultative species.

Class III PHW Streams: Class III PHW Streams usually have perennial water flow with cool-cold water adapted native fauna. Class III PHW streams are comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.2.3 OEPA 401 WATER QUALITY CERTIFICATION FOR NATIONWIDE PERMIT ELIGIBILITY

The OEPA has designated each watershed in the state on the basis of whether it may be ineligible for coverage under Ohio EPA's 401 Water Quality Certification for Nationwide Permits. Mapping provided by OEPA illustrate the eligibility of streams in the area for a nationwide 401 permit. Three categories are identified as eligible, ineligible, and possibly eligible with additional field screening required. Impacts to streams within each watershed would then have eligibility for 401 Water Quality Certification determined by the watershed category. Figure 4 shows the category of each watershed in the Project area. The three categories are defined as:

Eligible: Streams within the watershed are eligible for coverage under Ohio EPA's water quality certification for the nationwide permits if all other general and regional special terms and conditions are met.

Ineligible: Projects affecting high quality streams and undesignated streams draining directly to high quality streams, as represented in the map, must undergo an individual 401 Water Quality Certification review process.

Possibly Eligible: Additional field screening procedures are required for streams in the watershed to determine appropriate eligibility. Projects affecting undesignated streams within those HUC12 watersheds that do not directly but eventually drain into high quality waters, might be eligible for coverage under Ohio EPA's 401 Water Quality Certification for Nationwide Permits depending on the results of a field screening assessment. The procedures for determining individual stream eligibility in this scenario are specified in Appendix C “Stream Eligibility Determination Process” of the OEPA Ohio State Water Quality Certification of the 2017 Nationwide Permit Reauthorization.

2.2.4 UPLAND DRAINAGE FEATURE

An upland drainage feature (UDF) is a non-jurisdictional drainage that does not meet the criteria of either a jurisdictional stream or a wetland. A UDF generally lacks an OWHM (USACE, 2005), and are equivalent to a swale or an erosional feature as described by the USACE: “generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale” (USACE, 2007). In addition, UDF’s are “generally not waters of the U.S. because they are not tributaries, or they do not have a significant nexus to TNWs. Even when UDF’s are not considered “Waters of the United States”, they may still contribute to a surface hydrologic connection between an adjacent wetland and a traditional navigable water and could be subjected to other Clean Water Act regulations.

A roadside ditch may also be documented as a UDF if it meets the “not potentially jurisdictional” characterization as described in the Office of Environmental Services Roadway Ditch Characterization Flowchart (Ohio Department of Transportation, 2014). This would include a ditch that originates entirely within the roadway right-of-way, has a seasonal flow regime, was not constructed to drain a wetland, and does not have hydrophytic vegetation extending more than an insignificant amount beyond its original configuration.

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a rare, threatened, and endangered species review and general field habitat surveys within the Project survey corridor. The first phase of the survey involved a review of online lists of federally and state-listed species. In addition to the review of available lists, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section as well

as the United States Fish and Wildlife Service (USFWS) in August 2020 soliciting comments on the proposed Project. Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys as part of the second phase of assessing rare, threatened, and endangered species. Land uses within the Project survey corridor were assigned a general classification based upon the principal land characteristics and vegetative cover as observed during the field surveys.

AECOM reviewed publicly available data to identify underground voids which could be potential hibernation sites for overwintering bats (hibernacula). AECOM compared the Project area and 0.25-mile buffer to the information provided by ODNR Division of Mineral Resources and Division of Geological Survey resources on known mining activity and karst geology in Vinton County and reviewed them for indications of likely underground voids. This desktop assessment for winter bat habitat is located in Appendix G.

3.0 RESULTS

In September and October 2020, AECOM ecologists walked the Project survey corridor to conduct the wetland delineation, stream assessment and habitat survey. Within the Project survey corridor, AECOM delineated four wetlands, four streams, and no ponds. The delineated features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Survey of Vinton County, Ohio, and the NRCS Hydric Soils Lists of Ohio, seven soil map units of three soil series are mapped within the Project survey corridor (USDA NRCS, 2020). Of these soil map units, none are identified as hydric. Table 1 provides a detailed overview of all soil series and soil map units within the Project survey corridor. Soil map units located within the Project survey corridor are shown on Figure 2.

TABLE 1: SOIL MAP UNITS AND DESCRIPTION WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Bethesda	Bhs4D	Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed	spoil piles on ridges on hills	No	NA
	Bhs4F	Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed	spoil piles on ridges on hills	No	NA
	Bhv1B	Bethesda silt loam, 0 to 8 percent slopes, reclaimed	reclaimed lands on ridges on hills	No	NA

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
	Bhv1D	Bethesda silt loam, 8 to 25 percent slopes, reclaimed	reclaimed lands on hillslopes on hills	No	NA
Wellston	WbC	Wellston silt loam, 8 to 15 percent slopes	ridges on uplands	No	NA
Wharton-Latham	WhL1D1	Wharton-Latham silt loams, 15 to 25 percent slopes	hills on hills	No	NA
	WhL1E1	Wharton-Latham silt loams, 25 to 40 percent slopes	hills on hills	No	NA

USDA, NRCS. Soil Survey Geographic (SSURGO) Database. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed October 21, 2020.
USDA, NRCS. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed October 21, 2020

3.1.2 National Wetland Inventory Map Review

National Wetland Inventory wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. In addition, small wetlands are typically not identified due to the scale of aerial photography. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

Two mapped NWI wetlands are located within the Project survey corridor. These NWI wetlands are described below in Table 2 and illustrated on Figure 2:

TABLE 2: NWI DISPOSITION SUMMARY TABLE WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

NWI Code	NWI Description	Figure 2	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
PFO1C	Palustrine, Forested, broad-leaved deciduous, seasonally flooded	2D	Wetland 03	Wetland extends outside Project survey corridor
R4SBC	Riverine, Intermittent, Stream Bed, Seasonally Flooded	2C	Stream 03	Stream extends outside Project survey corridor

3.1.3 Delineated Wetlands

During the field survey, AECOM identified four wetlands – totaling approximately 0.7 acres – within the Project survey corridor. A summary of these delineated wetlands is listed in **Appendix A** and **Table 3**.

AECOM provided a preliminary classification of jurisdictional status for each wetland based upon the Clean Water Act after the 2020 Navigable Waters Rule vacatur. Three wetlands (Wetland 02, Wetland 03 and Wetland 04) are considered not isolated and therefore, WOTUS. Final jurisdictional status can only be determined by the USACE.

The locations and approximate extent of the wetlands identified within the Project survey corridor are shown on Figure 2 and Figure 3. Completed USACE and ORAM wetland delineation forms are provided in **Appendix B**. Color photographs taken of the wetlands are provided in **Appendix B**.

3.1.4 Delineated Wetlands ORAM Results

Category 1 Wetlands

No Category 1 wetlands were delineated within the Project survey area.

Category 2 Wetlands

Four (4) Category 2 wetlands were delineated within the Project survey corridor. Three wetlands are PEM habitat and one consisted of PFO habitat. The wetlands exhibited very narrow to wide upland buffers, very low to high intensive surrounding land use (e.g. row cropping and 2nd growth or older forest), no percentage of invasive species, and exhibited recovered modifications to natural hydrologic regime. Substrate disturbances and habitat alteration were observed to be recovering to recovered from recent manipulation due to mowing and selective cutting.

One wetland (Wetland 03) was originally assessed and presumed to be a category 3, but after reviewing historical topographic data the wetland was determined to be a category 2 based on historical mining in the area.

Category 3 Wetlands

No Category 3 wetlands were delineated within the Project survey area.

TABLE 3: DELINEATED WETLANDS SUMMARIZED BY COWARDIN AND ORAM TYPE WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Cowardin Wetland Type[a]	ORAM Category 1	ORAM Modified Category 2	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project Survey Corridor	Wetland Name and Length Crossed by Centerline (feet)
PEM	0	0	3	0	3	0.4	Wetland 04 40 ft
PFO	0	0	1	0	1	0.3	Wetland 03 80 ft

Cowardin Wetland Type[a]	ORAM Category 1	ORAM Modified Category 2	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project Survey Corridor	Wetland Name and Length Crossed by Centerline (feet)
Acreage per ORAM Category	0	0	0.7	0	NA	NA	NA
Total	**0**	**0**	**4**	**1**	**4**	**0.7**	**120**

Cowardin Wetland Type[a]: PEM = palustrine emergent; PFO = palustrine forested

3.2 STREAM CROSSINGS

AECOM identified four streams, totaling 655 linear feet, within the Project survey corridor, as listed in **Appendix C**. The streams are comprised of one ephemeral stream and three perennial streams. The locations of the streams identified within the Project survey corridor are shown on **Figure 3**.

HHEI evaluations were conducted on all four streams. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

AECOM has preliminarily determined that the assessed streams (Streams 01-04) within the Project survey corridor appear to be jurisdictional (i.e., WOTUS.), based on the Clean Water Act after the 2020 Water Rule vacatur. Final jurisdictional status of the identified waterbodies can only be determined by the USACE.

3.2.1 Qualitative Habitat Evaluation Index

No streams within the Project survey corridor were assessed with the QHEI methodology.

3.2.2 Primary Headwater Habitat Evaluation Index

One ephemeral and three perennial headwater streams, totaling 655 linear feet, were identified within the Project survey corridor. These streams included one Modified Class I PHW stream, and three Class III PHW streams. Completed HHEI forms for each stream and photographs taken during the field survey are provided in **Appendix D**.

Class III Primary Headwater Streams – Three Class III PHW Streams, totaling approximately 573 feet, with scores ranging from 71 to 77, were identified during the field investigations. The substrates of the streams primarily consisted of gravel, sand, and bedrock, with smaller amounts of boulder, boulder slabs, cobble, fine detritus material, leaf pack/woody debris, and silt. The maximum pool depths of the streams ranged from 9 inches to 18 inches and the average bankfull widths ranged from 7.1 feet to 16 feet. Stream 03 had overall moderately stable stability of both stream banks while Stream 02 and Stream 04 had overall stable stability of both stream banks.

Modified Class I Primary Headwater Stream – One Modified Class I PHW Stream, totaling approximately 82 linear feet, with a score of 27, was identified during the field investigations. The substrates of the stream

primarily consisted of silt, and sand, with smaller amounts of leaf pack/woody debris. The maximum pool depth of the stream was zero inches and the average bankfull width was 3.5 feet. Both stream banks appeared to be stable. The stream showed evidence of stream channel modification (e.g. channelization, culverting, etc.), which resulted in the stream receiving a Modified Class I PHW Stream designation.

3.2.3 OEPA STREAM ELIGIBILITY

OEPA stream eligibility for 401 Water Quality Certification mapping was reviewed for the field identified streams. The Project survey corridor occurs in two watersheds designated by 401 WQC eligibility and are listed in **Table 4**. Both watersheds are designated "Eligible". OEPA stream eligibility mapping for the Project vicinity, with field identified streams, is provided on Figure 4.

TABLE 4
SUMMARY OF WATERSHED 401 WQC ELIGIBILITY WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

HUC-12	Watershed	401 WQC Eligibility	Number of Streams Delineated
050901010202	West Branch Racoon Creek	Eligible	4
050901010203	Brushy Fork	Eligible	0
		Total	**4**

3.3 PONDS

No ponds were identified within the Project survey corridor during the survey.

3.4 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY CORRIDOR

AECOM ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys in September and October 2020. Portions of the Project survey corridor were identified as grassland, hay field/pasture, landscaped areas, old field, mixed mesophytic forest, scrub-shrub, streams/wetlands, and urban areas. Habitat descriptions, applicable to the Project, and details on the expected impacts of construction are provided below in **Table 5**. Vegetated land cover can be seen visually from aerial photography provided on **Figure 5**. Color photographs of habitat types observed within the Project survey corridor are included in **Appendix E.**

TABLE 5
VEGETATIVE COMMUNITIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Vegetative Community	Description	Approximate Acreage Within the Project Survey Corridor	Approximate Percentage Within the Project Survey Corridor
Grassland	Grassland fields were observed in various portions of the Project corridor. These areas within the corridor and in adjacent areas border agricultural and residential properties and consist of seldomly disturbed upland grasses and low-lying forbs such as little bluestem (*Schizachyrium scoparium*), broomsedge (*Andropogon virginicus*), yellow foxtail (*Setaria pumila*), red clover (*Trifolium pratense*), wild carot (*Daucus carota*), and goldenrod (*Solidago altissima*).	5.3	11.9%
Hay Field/Pasture	Cattle and/or horse pasture, and hay fields were observed in various portions of the Project corridor. These areas within the corridor and in adjacent areas consist of seasonally mowed and grazed areas of grass and forbs.	4.7	10.5%
Landscaped Areas	Landscaped areas (residential properties) were observed within the Project vicinity. These landscaped areas within the Project survey corridor and adjacent areas are frequently mowed grasses and forbs.	5.7	12.7%
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.	12.5	28%
Scrub-Shrub	Scrub-shrub habitats represent the successional stage between old-field and second growth forest, and often emerge in recently harvested forests responding to the lightness of the remaining canopy. Dominant species consist of herbaceous communities similar to that of old field habitat with a few woody species, to a community dominated by forest herbs and woody species.	2.6	5.8%
Streams/Wetlands	Streams and wetlands were observed both within and beyond the survey corridor for the Project.	1.8	4%
Mixed Mesophytic Forest	Mixed mesophytic forests are present along the Project survey corridor. Woody species dominating these areas included tulip poplar (*Liriodendron tulipifera*), sugar maple (*Acer saccharum*), black walnut (*Julans nigra*), white oak (*Quercus alba*), silver maple (*Acer saccharinum*), and mockernut hickory (*Carya tomentosa*). The dominant shrub-layer species included mockernut hickory, sugar maple, tulip poplar, black cherry (Prunus serotina), American beech (*Fagus grandifolia*), and American hornbeam (*Carpinus caroliniana*).	11.8	26.4%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	0.3	0.7%
Totals:		**44.7**	**100**

3.5 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a survey for potential rare, threatened and endangered species habitat within the Project survey corridor. A summary of the agency coordination responses is provided below. Correspondence letters from the USFWS and ODNR are included as **Appendix F**. **Table 6** provides a list of federal and state-listed threatened and endangered species identified as possibly occurring within or near the Project during the rare, threatened, and endangered species review.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Mammals						
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	Yes-Within the Project survey corridor, wooded areas were identified within Wayne National Forest, which present potentially suitable summer roosting habitat. No winter hibernacula were identified within 0.25 mile of the Project.	ODNR-DOW commented that the Project is located within the Indiana bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonal tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS commented that the Indiana bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31 to avoid impacts to Indiana bats.	Potential suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by this species. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical because insect prey density is greater over or near open water. This species has also been found, albeit rarely, roosting in structures like barns and sheds.	Yes-Within the Project survey corridor, wooded areas with adjacent waterbodies were identified within Wayne National Forest, which present potentially suitable summer roosting habitat. No winter hibernacula were identified within 0.25 mile of the Project.	ODNR-DOW commented that the Project is located within the northern long-eared bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonal tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS commented that the Northern long-eared bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Little brown bat (*Myotis lucifugus*)	Endangered	Threatened	Little brown bats are habitat generalists, using most cover types available to them in a variety of ecosystems. Much of their foraging activity is associated with aquatic habitats, so lakes and streams play a significant factor in habitat use.	Yes-Within the Project survey corridor, wooded areas with adjacent waterbodies were identified within Wayne National Forest, which present potentially suitable summer roosting habitat. o winter hibernacula were identified within 0.25 mile of the Project.	ODNR-DOW commented that the Project is located within the little brown bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS did not comment on this species.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.
Tricolored bat (*Perimyotis subflavus*)	Endangered	None	Tricolored bats are associated with forested landscapes, often in open woods. They can also be found over water and adjacent water edges. Tricolored bats commonly roost among the leaves or needles of live or dead trees but will also use buildings. The bats hibernate in caves, mines, and rock outcroppings.	Yes-Within the Project survey corridor, wooded areas with adjacent waterbodies were identified within Wayne National Forest, which present potentially suitable summer roosting habitat. No winter hibernacula were identified within 0.25 mile of the Project.	ODNR-DOW commented that the Project is located within the tricolored bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS did not comment on this species.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Reptiles						
Timber rattlesnake (*Crotalus horridus*)	Endangered	Species of Concern	In addition to wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW indicated that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	ODNR determined that this project is not likely to impact this species.
Fish						
Northern brook lamprey (*Ichthyomyzon fassor*)	Endangered	None	The northern brook lamprey inhabits clean headwater areas of creeks and small rivers with coarse gravel to rock bottoms located in once glaciated terrain.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Ohio lamprey (*Ichthyomyzon bdellium)*	Endangered	None	The Ohio lamprey inhabits warmwater habitats in the Ohio River basin, including the Allegheny, Wabash, and Upper Tennessee drainages. Depending on the life cycle period, this species either inhabits slow areas with soft substrates and high detrital content, medium to large river systems, or runs and riffles of clean gravel/cobble in smaller streams and rivers.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Spotted darter (*Etheostoma maculatum*)	Endangered	None	This species requires large unpolluted streams, spending most of its time in deep riffles, or pools just downstream, where a gravel-rubble bottom predominates, and bottom current velocity is low.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Tippecanoe darter (*Etheostoma tippecanoe*)	Threatened	None	This little darter prefers riffle areas four to 20 inches deep, in clean rivers and large creeks with a bottom of pea-sized, clean gravel and a high bottom current velocity	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Bivalves						
Little spectaclecase (*Villosa lienosa)*	Endangered	None	This species lives in sandy substrates in slight to moderate current. The mussel prefers mud and typically inhabits small creeks to medium-sized rivers with perennial flow regimes, usually along the banks in slower currents.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW comments that due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Birds						
Northern harrier (*Circus hudsonis*)	Endangered	None	This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands.	Yes- undulating grasslands were identified within the Project survey corridor, which present potentially suitable habitat.	ODNR-DOW recommends that construction should be avoided within the grassland habitat during the species' nesting period of May 15 to August 1. If this type of habitat will not be impacted, the Project is not likely to impact this species.	Potentially suitable habitat (grasslands) were observed within the Project survey corridor. It is recommended that construction within this habitat takes place outside of the bird's nesting period (May 15 to August 1).
Amphibians						
Eastern hellbender (*Cryptobranchus alleganiensis)*	Endangered	Species of Concern	The eastern hellbender's habitat consists on shallow, fast-flowing rocky streams. They are generally found in areas with large, intermittent, irregularly shaped rocks, within swift water. They tend to stay away from slow-moving water and muddy banks with slab rock bottoms.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project.
Midland mud salamander (*Pseudotriton montanus diastictus*)	Threatened	None	This species inhabits muddy and silty areas along swamps, seeps, bogs, springs, floodplain forests, and headwater streams. Sightings of this species are rare, as the salamanders live underground in burrows.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	ODNR determined that this project is not likely to impact this species.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Eastern spadefoot toad (*Scaphiopus holbrooki*)	Endangered	None	This species if found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project.

ODNR Coordination – Coordination with the ODNR was initiated during the planning stages of the Project to obtain records of protected species located in the vicinity of the Project. On October 19, 2020, the ODNR Office of Real Estate Environmental Review Section replied to an emailed request for records of protected species within an extended area around the Project site. The Ohio Natural Heritage Database (ONHD) did not return records of state endangered or threatened plant or animal species within a one-mile radius of the Project area. Additionally, the ONHD did not return records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species.

The ODNR Division of Wildlife (DOW) recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The ODNR DOW also stated that due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact the little spectaclecase, the timber rattlesnake, the eastern hellbender, the midland mud salamander, or the eastern spadefoot toad

ODNR-DOW recommended that a desktop habitat assessment, followed by a field assessment (if needed), be conducted to determine if there are potential bat hibernaculum(a) present within the Project Area. In addition to conducting a general habitat survey in September and October 2020, AECOM performed a limited desktop habitat assessment to determine potential hibernaculum(a) within the Project area and the habitat assessment is included in this report in Appendix G. Two potential hibernacula were found as a result of the assessment and the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer be put around the hibernaculum entrance; however, limited summer or winter tree cutting may be acceptable after consultation with DOW.

USFWS Coordination – Coordination with the USFWS was also initiated during the planning stages of the Project to obtain technical assistance regarding federally listed species that may occur within the Project vicinity. The USFWS responded on October 7, 2020, indicating that the Project crosses the Wayne National Forest and a federal authorization from the Forest Service may be required. During the siting process of the Project, it was determined that a federal authorization from the Forest Service was not required for the Project.

4.0 SUMMARY

The ecological survey of the Project survey corridor identified a total of four wetlands, four streams, and no ponds. The wetlands consisted of three PEM wetlands and one PFO wetland, all of which were Category 2. Of the four wetlands, three have provisionally been classified as adjacent wetlands and WOTUS under the Clean water act after the 2020 Navigable Waters Rule vacatur, while the remaining one wetland has been provisionally classified as isolated and not WOTUS.

The four streams identified within the Project survey corridor include one ephemeral stream and three perennial streams. The four streams were assessed using the HHEI methodology (drainage area less than 1 mile [mi] ^{2}). Stream 03 was additionally assessed using the QHEI methodology (drainage area greater than 1 mi^{2}) due to its maximum pool depth measuring greater than 40 centimeters (cm).

AECOM has preliminarily determined that all identified streams appear to be jurisdictional (i.e., WOTUS.), based on the Clean Water Act after the 2020 Navigable Waters Rule vacatur. Final jurisdictional status of the identified waterbodies can only be determined by the USACE.

According to a response letter received from the USFWS on March 9, 2018, this Project is located within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. With regard to state threatened and endangered species that may occur within the Project vicinity, 14 species were listed by ODNR. These species included: Indiana bat, northern long-eared bat, little brown bat, tricolored bat, little spectaclecase, brook lamprey, Ohio lamprey, spotted darter, Tippecanoe darter, timber rattlesnake, eastern hellbender, midland mud salamander, eastern spadefoot toad, and the northern harrier.

Based on general observations during the ecological survey, a portion of the Project survey corridor contained potential summer habitat for the Indiana bat and the northern long-eared bat. The USFWS commented that due to the project type, size, and location, plus the proposal for seasonal tree cutting between October 1 and March 31, there should be no adverse effects to the Indiana bat or northern long-eared bat. ODNR stated that if suitable habitat occurs within the Project area, the DOW recommends trees be conserved. If suitable habitat occurs within the Project area and trees must be cut, the DOW recommends cutting between October 1 and March 31. Based on the Winter Bat Habitat Assessment (Appendix G) two potential winter hibernacula are located withing a 0.25-mile radius of the project. The DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer be put around the hibernaculum entrance; however, limited summer or winter tree cutting may be acceptable after consultation with DOW.

Based on general observations during the ecological survey, a portion of the Project survey corridor contained potentially suitable habitat for the northern harrier. The ODNR-DOW recommends that construction should be avoided within grassland habitat (old field & pasture/hay field) during the species' nesting period of May 15 to August 1.

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey boundary provided in Figure 3: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Project survey boundary were not evaluated in the field and are not included in the reporting of this survey.

The information contained in this wetland delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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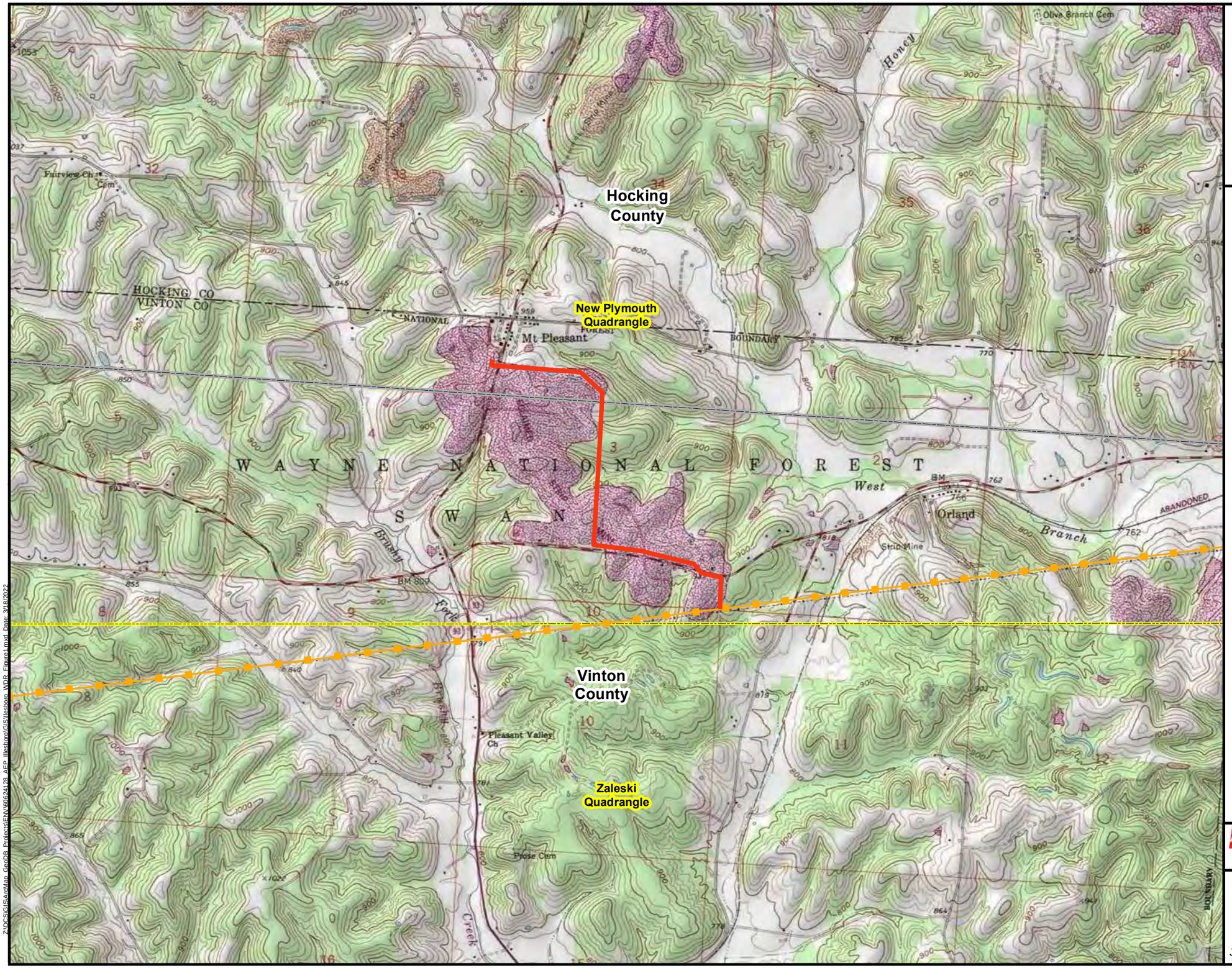
FIGURES



LEGEND:

- Proposed Ilesboro 138kV Transmission Line
- Existing Poston-Ross 138 kV Transmission Line
- Ohio USGS 7.5" Topographical Quadrangle
- County Boundary

N

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Feet

BASE MAP SOURCE:
Copyright:© 2013 National Geographic Society, i-cubed

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138kV Transmission Line

FIGURE 1
OVERVIEW MAP

JOB NO. 60624128

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No Hydric Soils were found within the Project Area

WbC
WbC
ScE
WhL1D1
WbC
ZnB
WhL1E1
Bhv1D
PUBGx
PUBGx
R4SBC
050901010202
West Branch
Raccoon Creek
ScE
050901010203
Brushy Fork
Upland 05
Wetland 04
PEM
Category 2
Bhv1B
WbC
Vinton
County
WhL1D1
Bhv1D

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- NWI Wetland (USFWS)
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed

ScE, Shelocta-Cruze silt loams, 25 to 40 percent slopes

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

ZnB, Zanesville silt loam, 3 to 8 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2A
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

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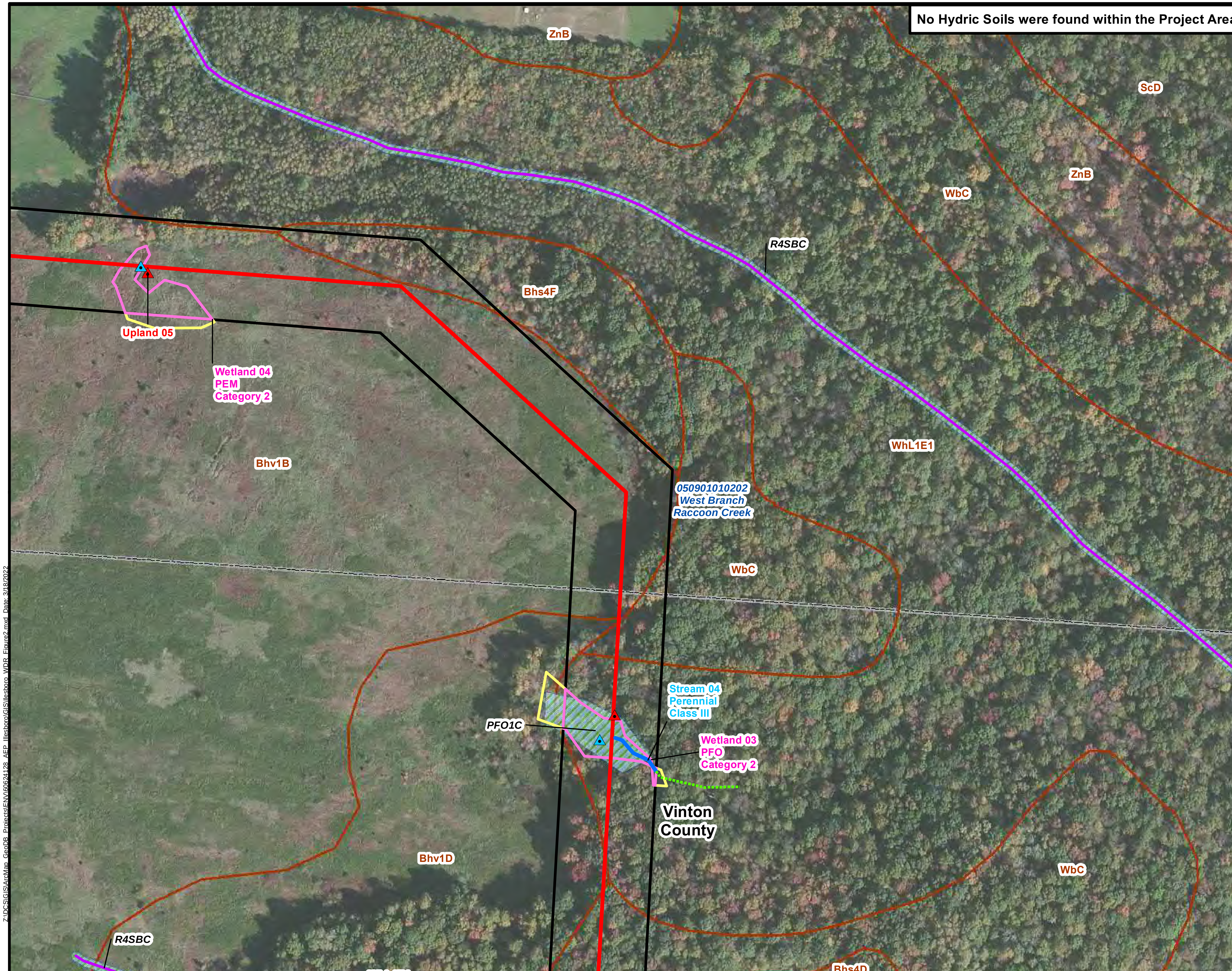

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- NWI Wetland (USFWS)
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

- Bhs4D, Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed
- Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed
- Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed
- Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed
- ScD, Shelocta-Cruze silt loams, 15 to 25 percent slopes
- WbC, Wellston silt loam, 8 to 15 percent slopes
- WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes
- ZnB, Zanesville silt loam, 3 to 8 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro South Central Power 138 kV Transmission Line

FIGURE 2B
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

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No Hydric Soils were found within the Project Area

R4SBC
Bhv1D
PEM1/UBFh
WhL1E1
Bhs4D
WbC
Stream 03
Perennial
Class III
Stream 02
Perennial
Class III
Bhv1B
WhL1E1
050901010202
West Branch
Raccoon Creek
Vinton
County
R4SBC
Stream 01
Ephermal
Modified Class I
Bhs4F
WhL1E1
PUBGx
Bhs4F
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Brushy Fork
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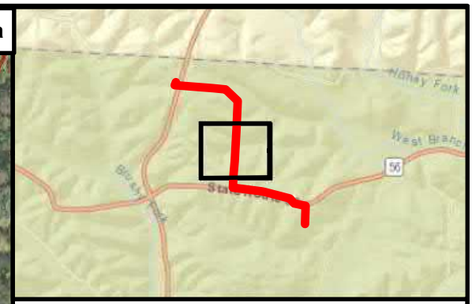
Bhv1D
PEM1Cx



LEGEND:

- Proposed Ilesboro 138 kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- NWI Wetland (USFWS)
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

- Bhs4D, Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed
- Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed
- Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed
- Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed
- WbC, Wellston silt loam, 8 to 15 percent slopes
- WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes
- WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2C
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

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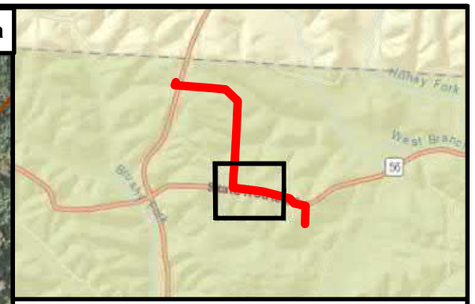
No Hydric Soils were found within the Project Area



Bhs4F
Bhv1B
Bhv1D
WbC
Bhs4D
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West Branch
Raccoon Creek
WhL1E1
Bhs4D
PEM1C
Bhv1D
Bhv1B
Wetland 01
PEM
Category 2
Upland 01
Upland 02
OH-56
Upland 03
Vinton
County
Wetland 02
PEM
Category 2
Bhs4D
050901010203
Brushy Fork
SbE
WbC
Bhv1D
R4SBC
WhL1D1
Brushy Creek
WbC
WbC
WhL1D1

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- NWI Wetland (USFWS)
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhs4D, Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed

Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed

SbE, Sewell channery fine sandy loam, 20 to 40 percent slopes

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2D
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

Z:\DGS\GIS\Static\Jan_GeoDB_Projects\FEL\V60\62128_AEP_IllesboroGIS\Illesboro_WDP_Figure2d.mxd Date: 3/18/2022

No Hydric Soils were found within the Project Area

PEM1C
PUBGx
Bhs4D
Bhv1D
Bhv1D
PEM1/UBFx
WhL1E1
WbC
OH-56
66199
WbC
WbC
Bhs4D
OH-56
66199
OH-56
050901010202
West Branch
Raccoon Creek
Vinton
County
Bhv1B
Bhv1D
Bhv1B
WhL1D1
PUBGx
050901010203
Brushy Fork
WhL1D1
PUBGx
WbC
Omu1C1
WhL1D1
Omu1C1

LEGEND:

- Culvert
- Proposed Ilesboro 138 kV Transmission Line
- NWI Wetland (USFWS)
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

- Bhs4D, Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed
- Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed
- Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed
- Omu1C1, Omulga silt loam, 6 to 12 percent slopes
- WbC, Wellston silt loam, 8 to 15 percent slopes
- WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes
- WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2E
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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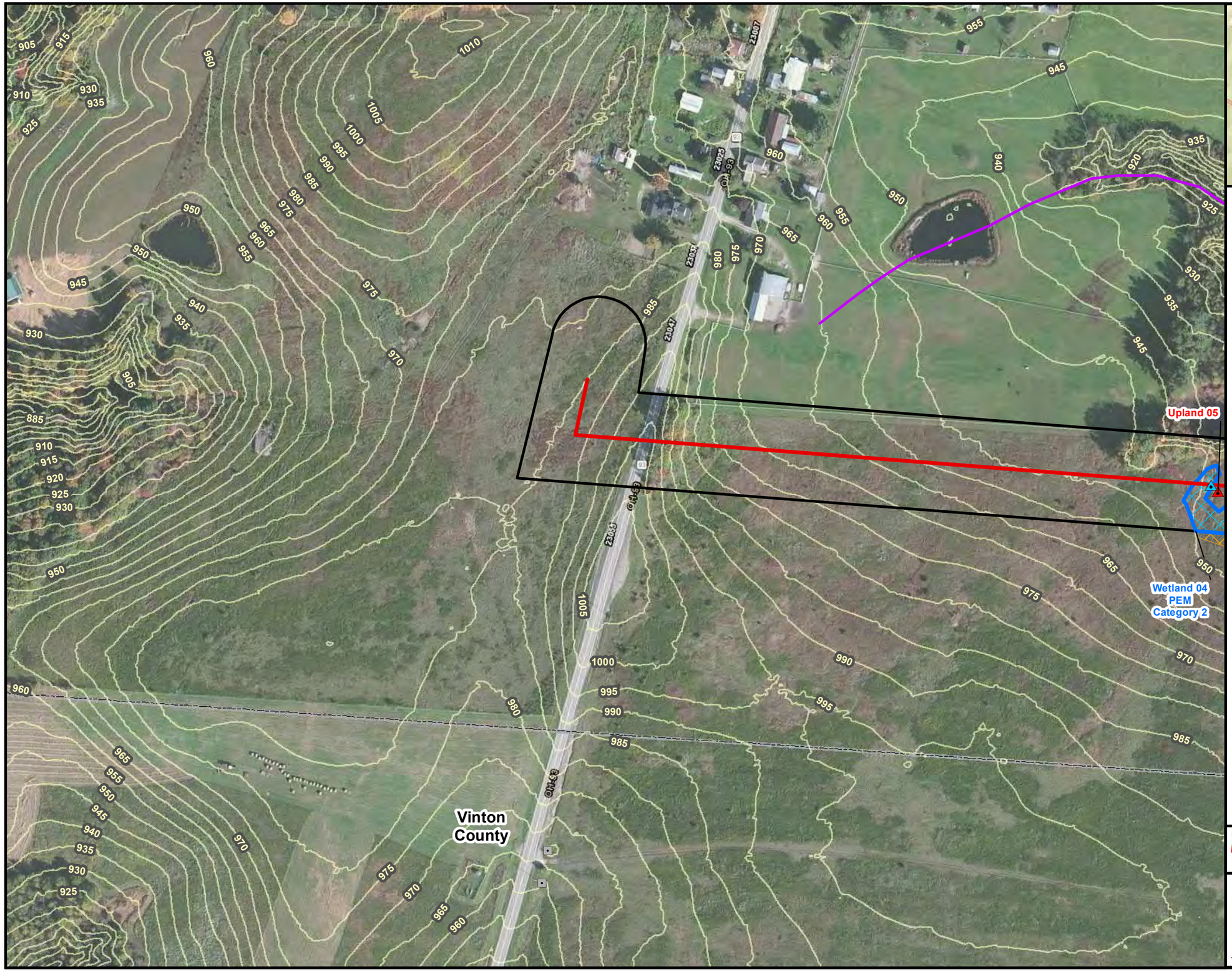

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3A
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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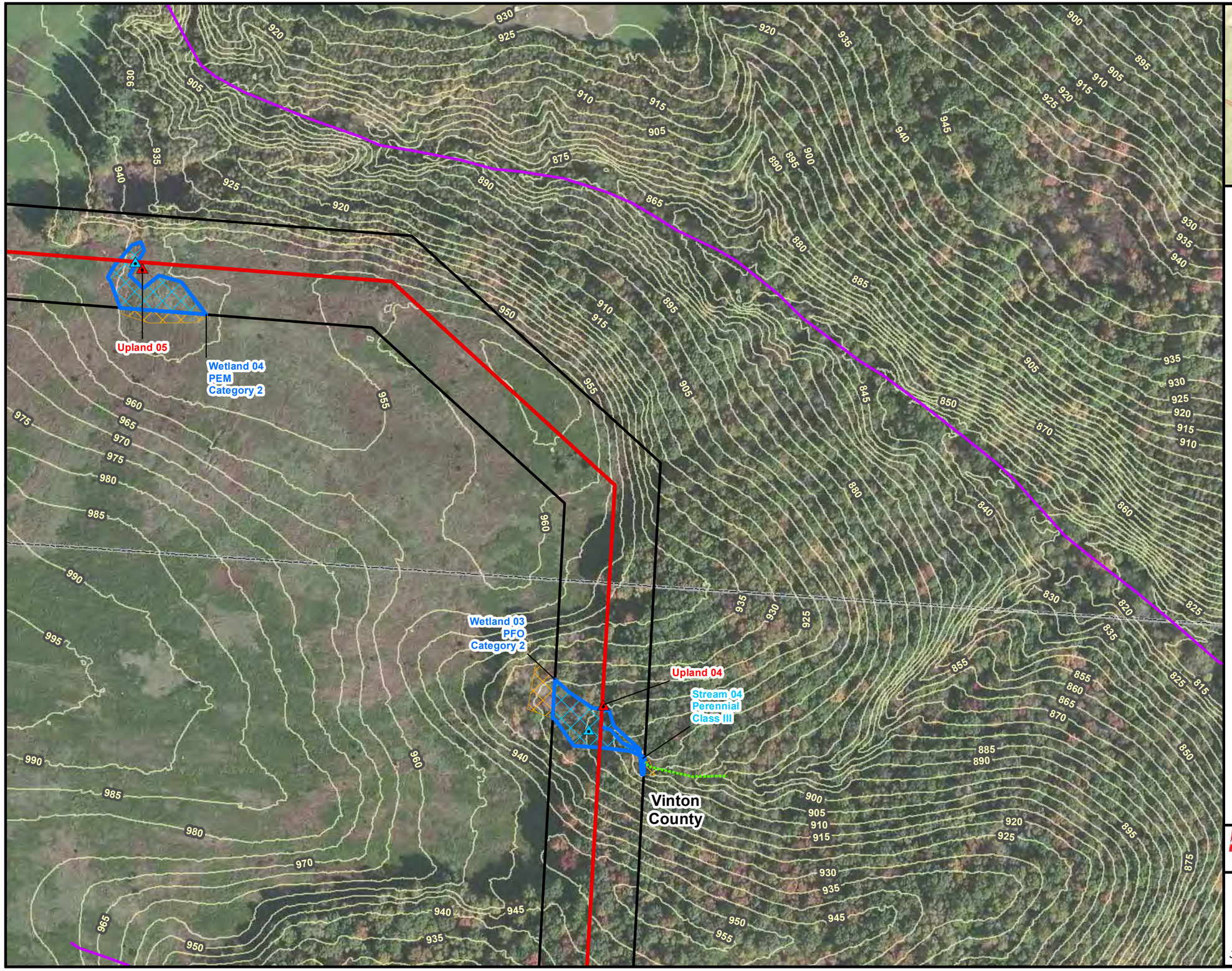

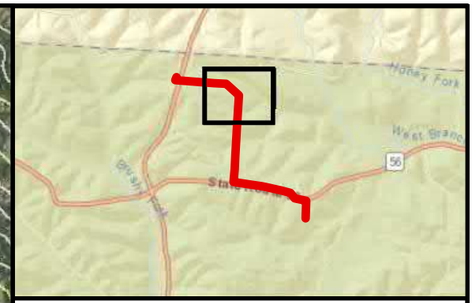

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3B
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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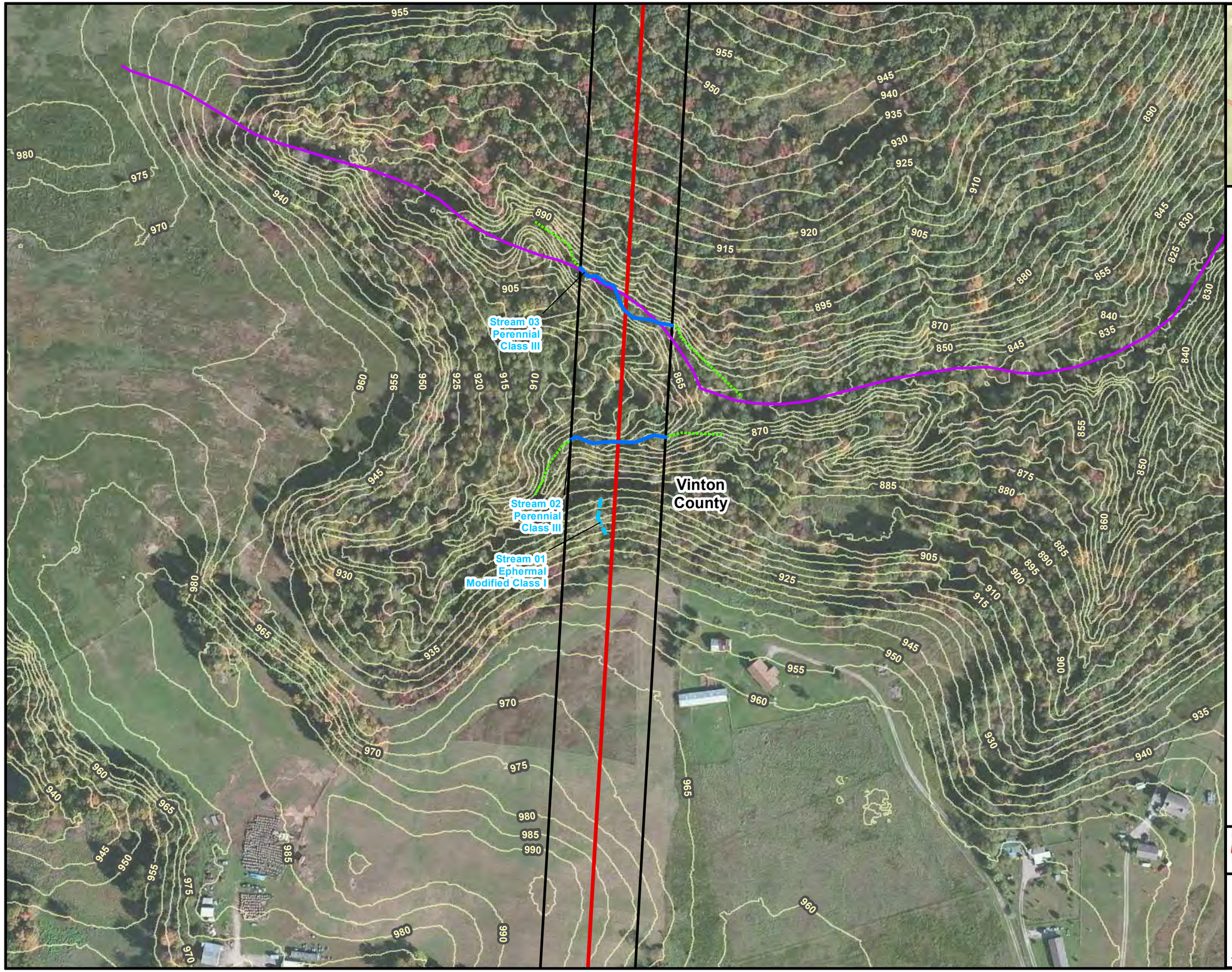

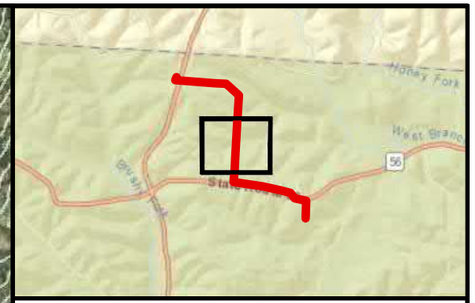

LEGEND:

- Proposed Ilesboro 138 kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3C
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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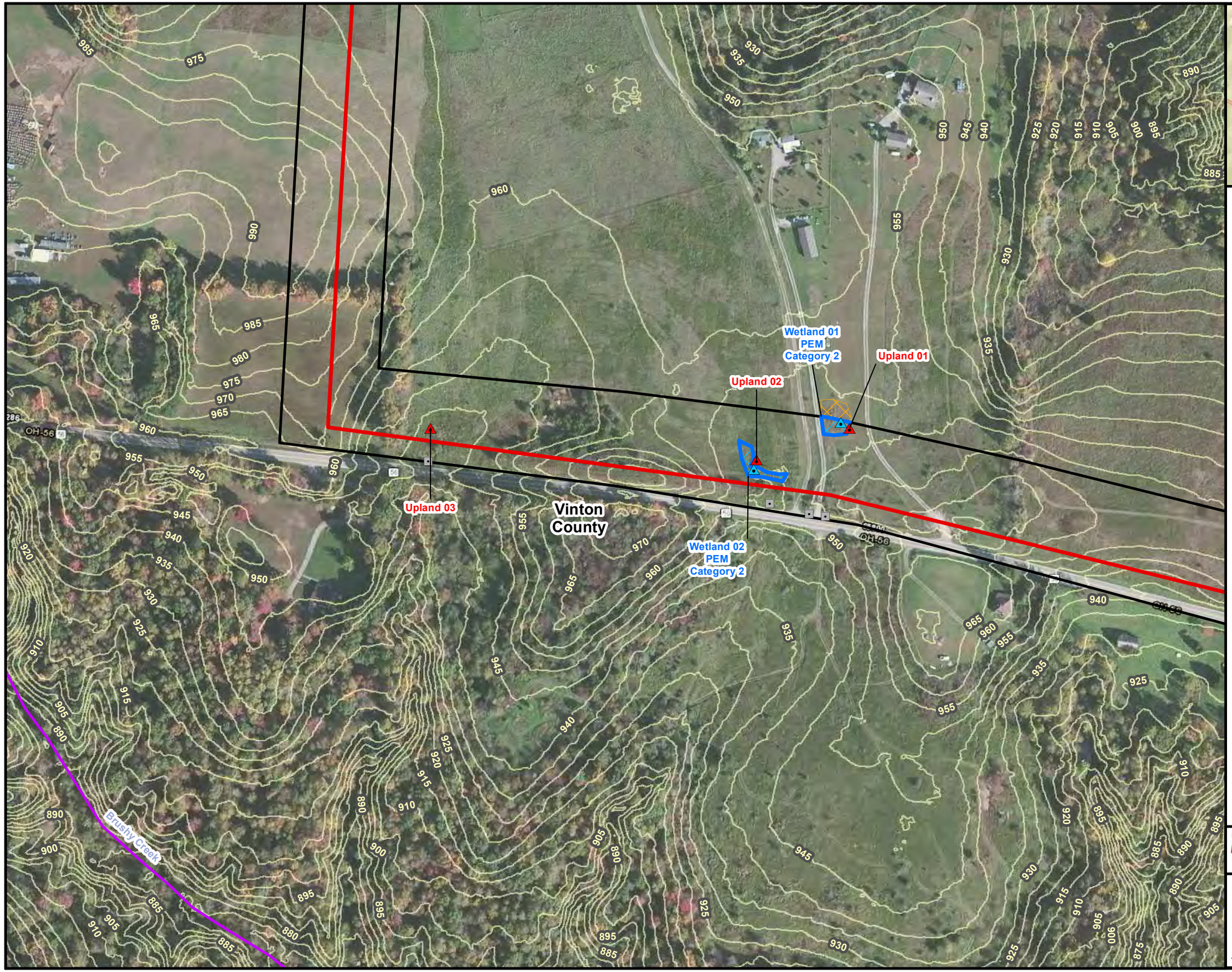
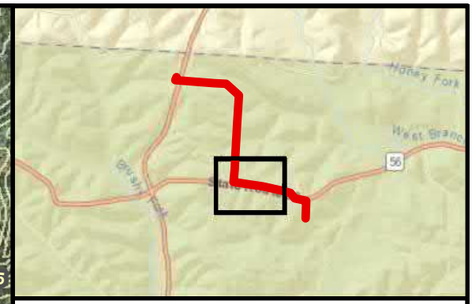




LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3D
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

Z:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_WDR_Figure3.mxd Date: 3/18/2022

LEGEND:

- Culvert
- Proposed Ilesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3E
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

Z:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_IllesboroGIS\Ilesboro_WDR_Figure3.mxd Date: 3/18/2022

Stream 04
Perennial
Class III

Stream 03
Perennial
Class III

Stream 02
Perennial
Class III

Stream 01
Ephermal
Modified Class I

Ohio EPA 401
Eligible

Ohio EPA 401
Eligible

Vinton
County

Mt. Pleasant

NATIONAL FOREST BOUNDARY

WAYNE NATIONAL FOREST

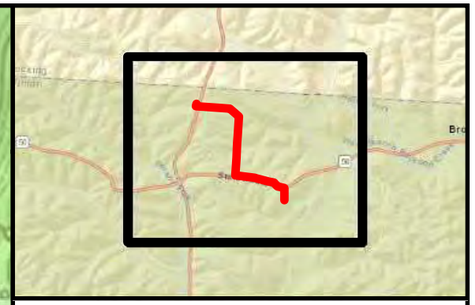
West Branch Raccoon Creek

Honey Fork

Brushy Fork

Brushy Creek

Strip Mine



LEGEND:

- Culvert
- Proposed Ilesboro 138 kV Transmission Line
- Approximate Stream
- Delineated Ephermal Stream
- Delineated Perennial Stream
- NHD Stream (USGS)
- Project Survey Corridor
- County Boundary

OEPA Stream Eligibility:

- Eligible

N

0 1,000 2,000
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 4
STREAM ELIGIBILITY MAP

JOB NO. 60624128

AECOM

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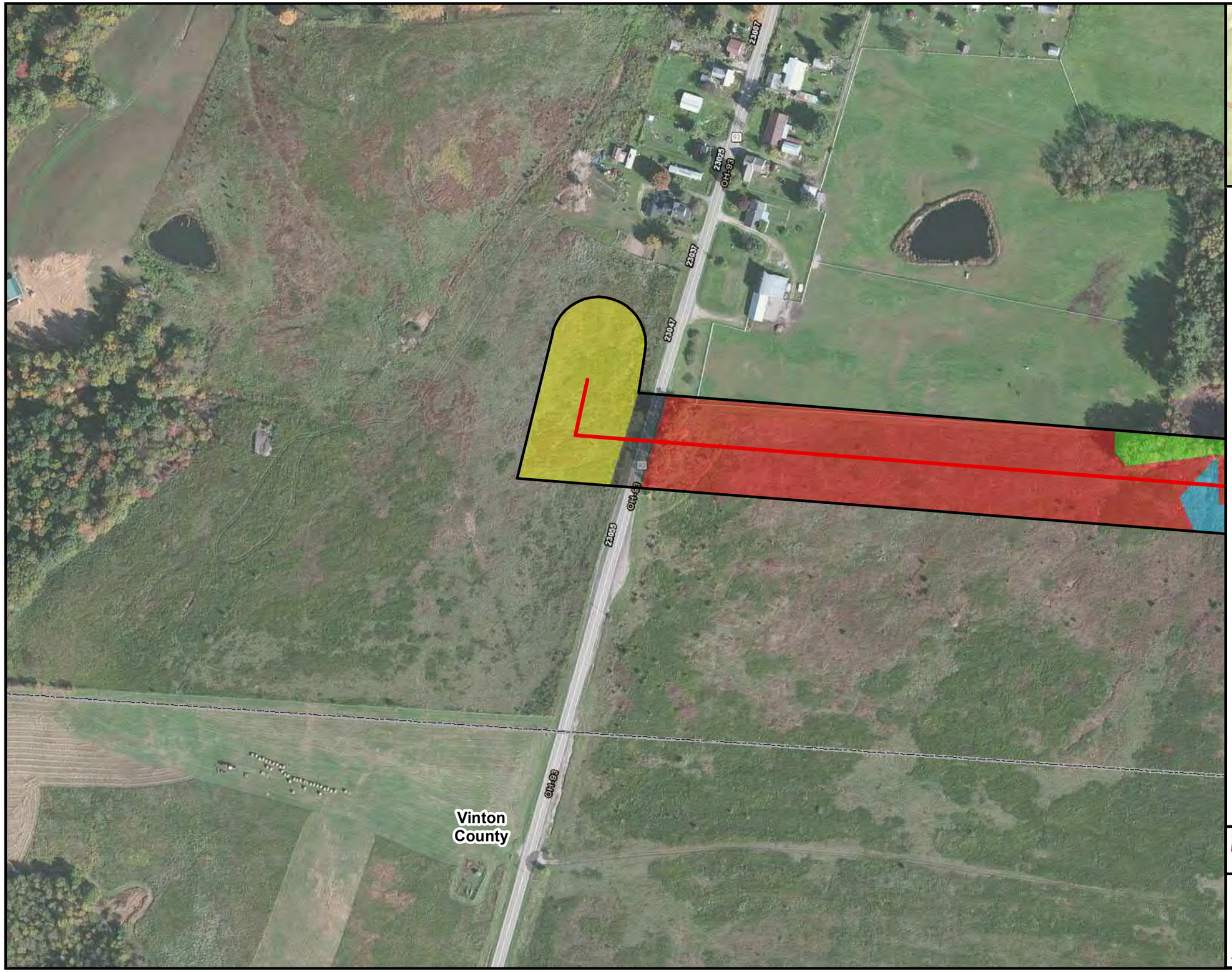


LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

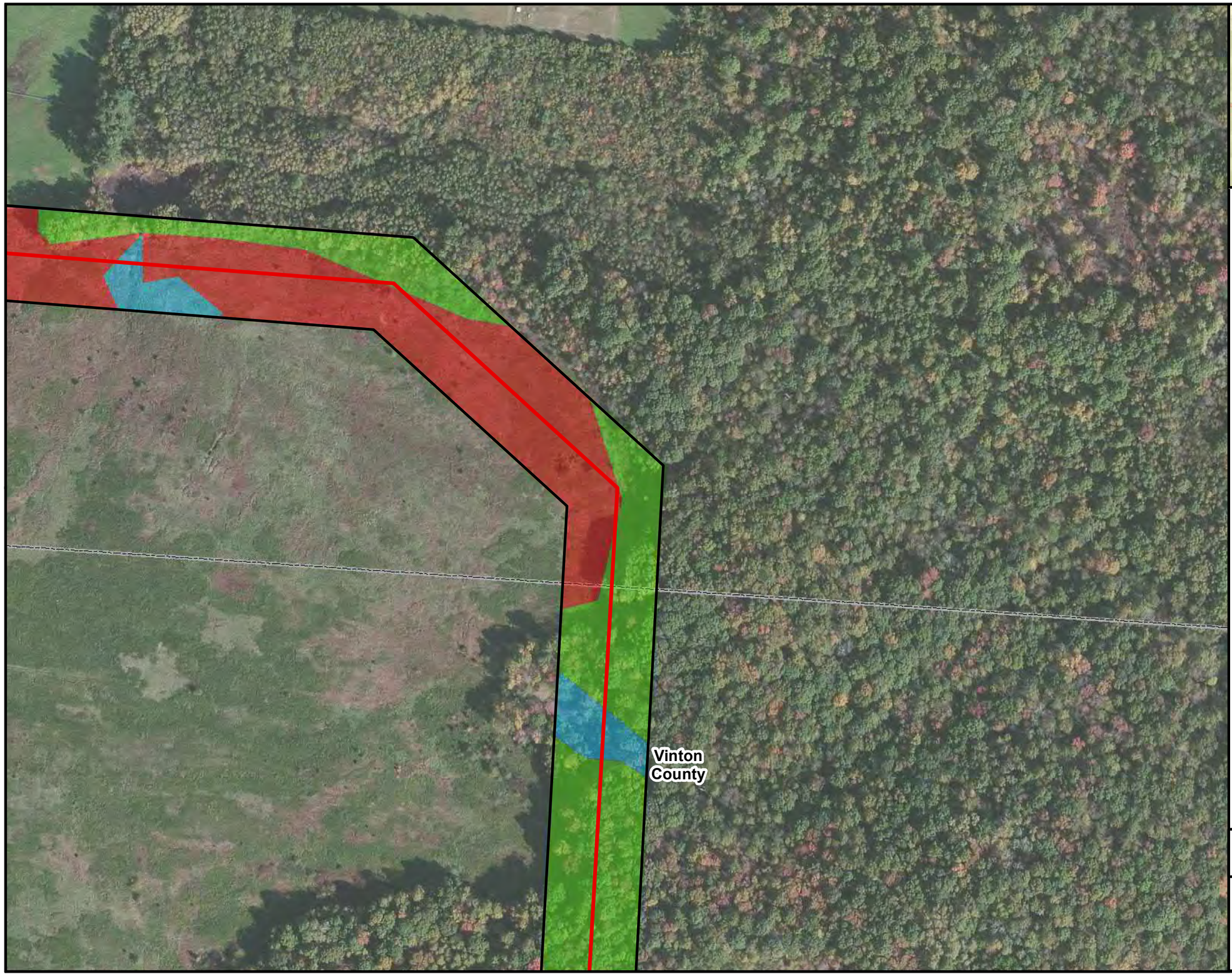
Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5A
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

Z:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\606124128_AEP_Illesboro\GIS\Ilesboro_WDR_Figure5.mxd Date: 3/18/2022



LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5B
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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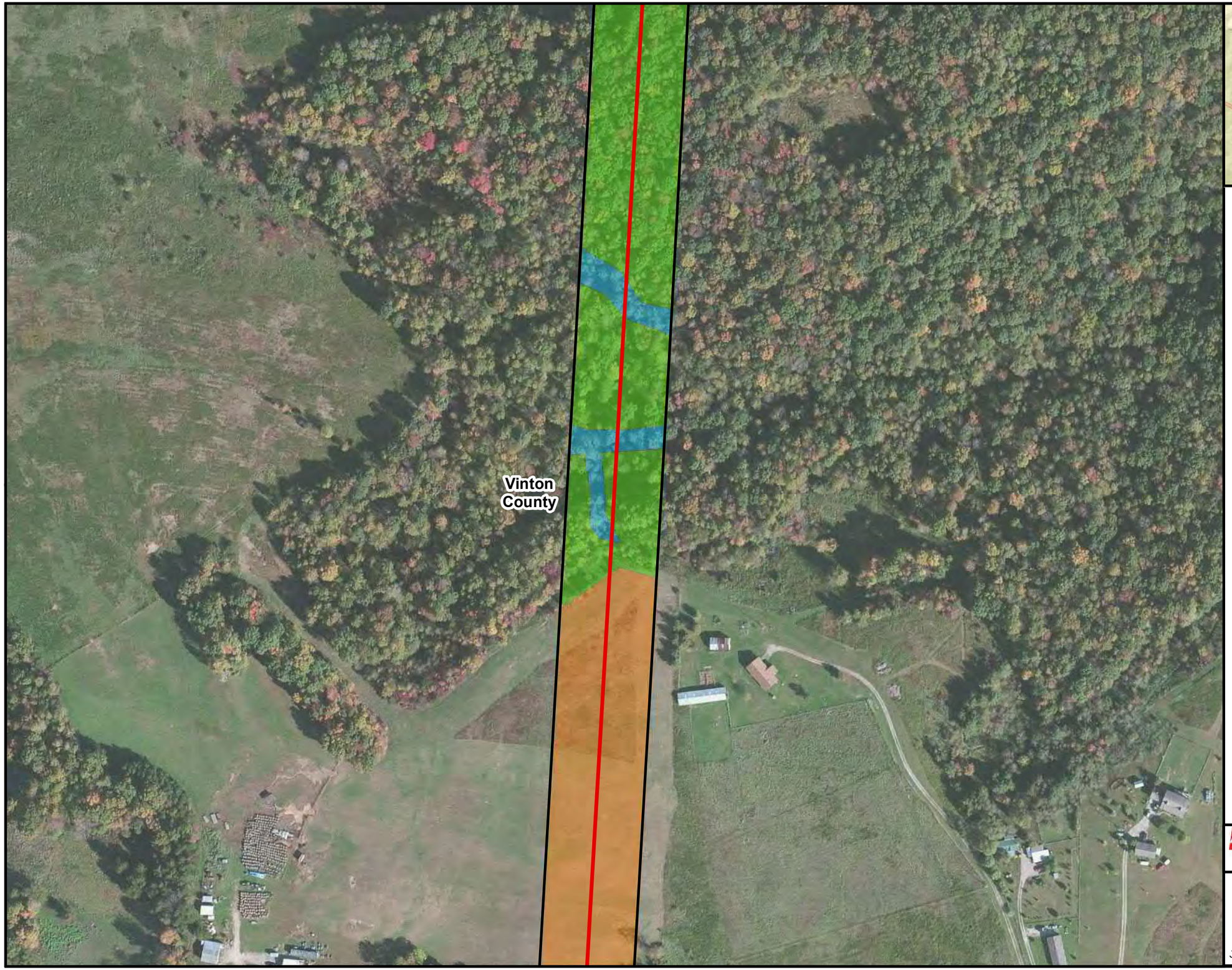

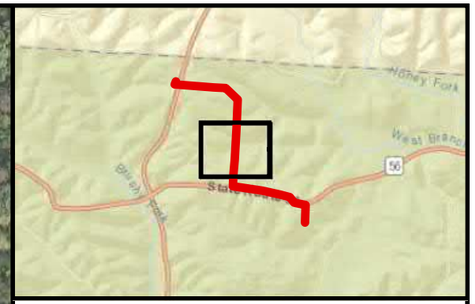

LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Grassland
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5C
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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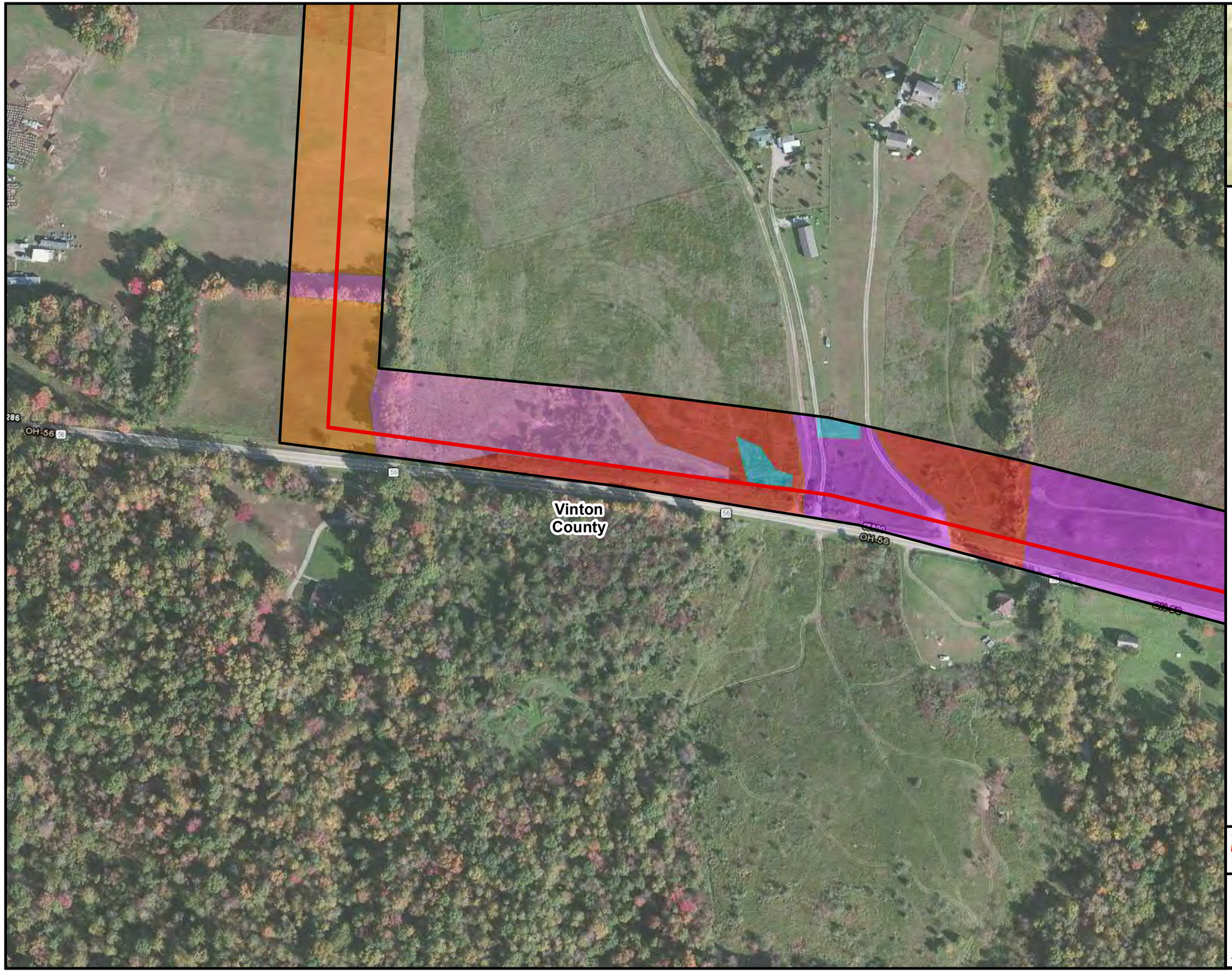
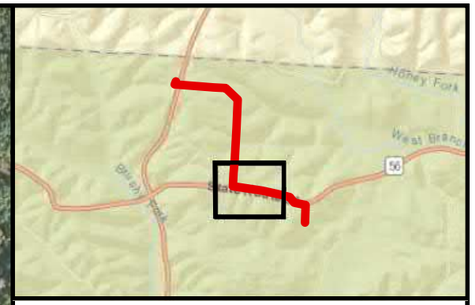




LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Grassland
- Old Field
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5D
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

Z:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\606124128_AEP_Illesboro\GIS\Illesboro_WDR_Figure5.mxd Date: 3/18/2022

LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Hay Field/Pasture
- Old Field
- Landscaped Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5E
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

Z:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\606124128_AEP_IllesboroGIS\Illesboro_WDR_Figure5.mxd Date: 3/18/2022

APPENDIX A

PROJECT WETLAND TABLE

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV T-LINE PROJECT
WETLAND TABLE

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland 01	39.379622	-82.446782	Yes	PEM	0.041	32	2	N/A	N/A	N/A	TBD	TBD	TBD
Wetland 02	39.379401	-82.447372	No	PEM	0.056	34.5	2	N/A	N/A	N/A	TBD	TBD	TBD
Wetland 03	39.387114	-82.450103	No	PFO	0.300	61	2	N/A	N/A	N/A	TBD	TBD	TBD
Wetland 04	39.389647	-82.453391	No	PEM	0.311	45	2	N/A	N/A	N/A	TBD	TBD	TBD
				Total:	**0.708**							**0.000**	**0.000**

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

APPENDIX B

U.S. ARMY CORPS OF ENGINEERS WETLAND DATA FORMS

OEPA WETLAND ORAM FORMS

DELINEATED FEATURES PHOTOGRAPHS (WETLANDS)

Wetland 01

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20201001-02 City/County: Vinton Sampling Date: 01-Oct-20

Applicant/Owner: AEP State: OH Sampling Point: -WRL-20201001-02-PE

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

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

Subregion (LRR or MLRA): LRR N Lat.: 39.37965 Long.: -82.44673 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	Is the Sampled Area within a Wetland? Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Sample point w-wrl-20201001-02-pem is point in to wetland W-WRL-20201001-02, a PEM wetland located in a depression, possibly old pond, in rolling hills landscape of reclaimed strip mine land. Wetland drains overland to flat area, potentially isolated. Wetland boundary fully delineated. Reclaimed strip mine land = significantly disturbed soils.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

One primary and two secondary hydrology indicators present. Primary source of hydrology is concentration of precipitation and surface runoff into shallow depression, having tussock growth herbaceous vegetation present. Wetland appears to be an old pond that has been partially filled in with no outlet present. Overflow water simply drains onto adjacent driveway. No obvious berm/dike/dam present. Potentially isolated.

Wetland 01

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **W-WRL-20201001-02-P**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Rosa multiflora	1	☑	100.0%	FACU
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	1	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Juncus effusus	30	☑	25.9%	FACW
2. Scirpus cyperinus	20	☑	17.2%	FACW
3. Epilobium coloratum	20	☑	17.2%	FACW
4. Carex vulpinoidea	10	☐	8.6%	OBL
5. Scirpus atrovirens	10	☐	8.6%	OBL
6. Carex grisea	10	☐	8.6%	FACU
7. Andropogon virginicus	5	☐	4.3%	FACU
8. Lactuca canadensis	5	☐	4.3%	FACU
9. Acalypha virginica	2	☐	1.7%	FACU
10. Typha latifolia	2	☐	1.7%	OBL
11. Conoclinium coelestinum	2	☐	1.7%	FAC
12.	0	☐	0.0%	
	116	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	75.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	22	x 1 =	22	
FACW species	70	x 2 =	140	
FAC species	2	x 3 =	6	
FACU species	23	x 4 =	92	
UPL species	0	x 5 =	0	
Column Totals:	117	(A)	260	(B)

Prevalence Index = B/A = 2.222

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Hydrophytic vegetation indicators present, dominance test=75%, dominant species are FACW and FACU.

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

Wetland 01

Soil

Sampling Point: **W-WRL-20201001-02-P**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-2	2.5Y	4/2	95	2.5Y	4/4	5	C	PL	Sandy Loam	
2-9	2.5Y	4/1	80	2.5Y	5/6	5	C	PL	Sandy Clay	distinct redox concentrations
				2.5Y	4/6	15	C	M		

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Shovel refusal at 11" due to rock. Significantly disturbed soils as reclaimed mine land, though hydric soil indicator well developed as low chroma with distinct redox in pore linings present.

Upland 01

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20201001-02 City/County: Vinton Sampling Date: 01-Oct-20

Applicant/Owner: AEP State: OH Sampling Point: JPL-WRL-20201001-03

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

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

Subregion (LRR or MLRA): LRR N Lat.: 39.37961 Long.: -82.44667 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

Sample point upl-wrl-20201010-03 is point out to wetland w-wrl-202001010-02, PEM wetland. Point out is approximately 3' east of boundary at equal elevation. Not a wetland point as no wetland criteria were met. Reclaimed strip mine land = significantly disturbed soils.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): 0

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrology indicators present.

Upland 01

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **UPL-WRL-20201001-03**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Elaeagnus umbellata	5	☑	71.4%	UPL
2. Rosa multiflora	2	☑	28.6%	FACU
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	7	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Lespedeza cuneata	50	☑	43.9%	FACU
2. Dipsacus fullonum	30	☑	26.3%	FACU
3. Andropogon virginicus	20	☐	17.5%	FACU
4. Symphyotrichum ericoides	5	☐	4.4%	FACU
5. Juncus effusus	5	☐	4.4%	FACW
6. Eupatorium serotinum	2	☐	1.8%	FAC
7. Lactuca canadensis	1	☐	0.9%	FACU
8. Vernonia gigantea	1	☐	0.9%	FAC
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	114	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	5	x 2 =	10	
FAC species	3	x 3 =	9	
FACU species	108	x 4 =	432	
UPL species	5	x 5 =	25	
Column Totals:	121	(A)	476	(B)

Prevalence Index = B/A = 3.934

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

No hydrophytic vegetation indicators present; dominance test = 0%, dominant species are FACU and UPL, prevalence index > 3.0

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

Upland 01

Soil

Sampling Point: **UPL-WRL-20201001-03**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-5	10YR 4/2	90	10YR 5/8	10	C	M	Sandy Loam	prominent redox concentrations in matrix
5-12	10YR 4/2	83	10YR 5/8	15	C	M	Sandy Clay	prominent redox concentrations in matrix
			10YR 4/1	20	D	M		

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators present. Soils significantly disturbed due to reclaimed strip mine land, imported soils may have some relict hydric characteristics still present (low chroma with distinct redox concentrations, not in pore linings).

Background Information

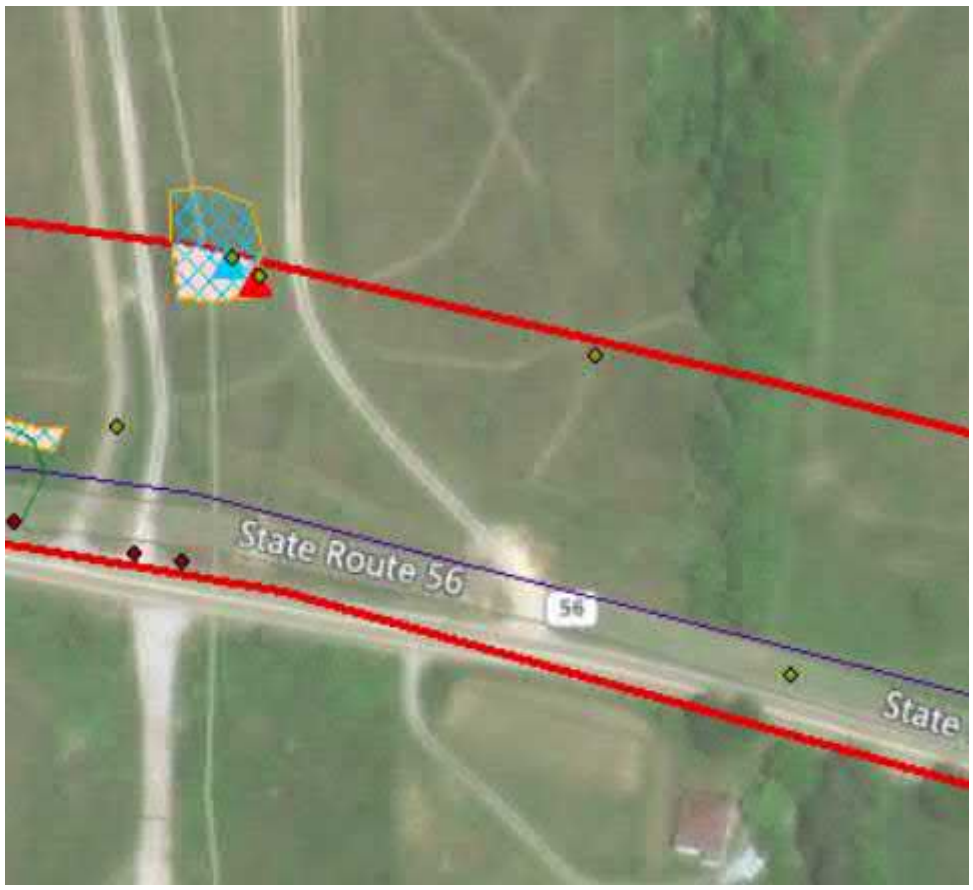
Name:	**Stacey K Mueller**
Date:	**10/1/2020**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**513-419-3450**
e-mail address:	stacey.mueler@aecom.com
Name of Wetland:	**Wetland 01**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Lat/Long or UTM Coordinate:	**39.37965 -82.44673**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**050901010202 - West Branch Raccoon Creek**
Site Visit:	**10/1/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**
Name of Wetland:	**Wetland 01**

Wetland Size (delineated acres):	0.04	Wetland Size (Estimated total acres):	0.09

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

Sample point w-wrl-20201001-02-pem is point in to wetland W-WRL-20201001-02, a PEM wetland located in a depression, possibly old pond, in rolling hills landscape of reclaimed strip mine land. Wetland drains overland to flat area, potentially isolated. Wetland boundary fully delineated. Reclaimed strip mine land = significantly disturbed soils. One primary and two secondary hydrology indicators present. Primary source of hydrology is concentration of precipitation and surface runoff into shallow depression, having tussock growth herbaceous vegetation present. Wetland appears to be an old pond that has been partially filled in with no outlet present. Overflow water simply drains onto adjacent driveway. No obvious berm/dike/dam present. Potentially isolated.

Final score:	32	Category:	2

Wetland ID:	Wetland 01

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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	Wetland 01

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	Wetland 01

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

Wetland ID:	**Wetland 01**

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland 01

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	10/1/2020

Field ID:

W-WRL-20201010-02

Delineated acres:	0.04
Total acres:	0.09

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3.0 (max 14 pts.) | 3.0 (subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

12.0 (max 30 pts.) | 15.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] Other: strip mining

Metric 4. Habitat Alteration and Development.

12.0 (max 20 pts.) | 27.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

27.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland 01

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	10/1/2020

Field ID:

W-WRL-20201010-02

27.0
subtotal this page

0.0 max 10 pts. | **27.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

5.0 max 20pts. | **32.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [0] 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)
- [x] None (0)

6c. Coverage of invasive plants. Refer

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)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [2] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

32.0	**TOTAL (Max 100 pts)**
2	**Category**

Wetland ID:	Wetland 01

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**0**		
	Metric 2. Buffers and surrounding land use	**3**		
	Metric 3. Hydrology	**12**		
	Metric 4. Habitat	**12**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**5**		
	TOTAL SCORE	**32**		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland 01

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 01

Date:

October 01, 2020

Description:

PEM

Category 2

Facing North

Wetland 01

Date:

October 01, 2020

Description:

PEM

Category 2

Facing East

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 01 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing South	

Wetland 01 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing West	

AECOM	PHOTOGRAPHIC RECORD WETLANDS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	**Project No.** 60624128

Wetland 01	
Date: October 01, 2020	
Description: PEM Category 2 Soil Pit	

Wetland 02

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20201001-01 City/County: Vinton Sampling Date: 01-Oct-20

Applicant/Owner: AEP State: OH Sampling Point: -WRL-20201001-01-PE

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): concave Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.37938 Long.: -82.44739 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	Is the Sampled Area within a Wetland? Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Sample point w-wrl-20201001-01-pem is point in to wetland w-wrl-20201001, a PEM wetland located in a depression in rolling hills of reclaimed strip mine land. Drains to south to small UDF that drains to culvert under roadway to open pasture; no downstream feature apparent, but culvert could provide downstream connection. Wetland boundary fully delineated. Reclaimed strip mine land = significantly disturbed soils.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

No primary and 2 secondary hydrology indicators present due to location as a drainage swale leading into UDF to roadway culvert; no down-stream feature apparent, but culvert could provide downstream connection. Primary source of hydrology is concentration surface runoff into depression area.

Wetland 02

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **W-WRL-20201001-01-P**

		Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum	(Plot size: 30' radius)				
1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	
		0	= Total Cover		
Sapling-Sapling/Shrub Stratum	(Plot size: 15' radius)				
1.	Platanus occidentalis	5	☑	71.4%	FACW
2.	Sambucus nigra	2	☑	28.6%	FAC
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	
9.		0	☐	0.0%	
10.		0	☐	0.0%	
		7	= Total Cover		
Shrub Stratum	(Plot size:)				
1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
		0	= Total Cover		
Herb Stratum	(Plot size: 5' radius)				
1.	Scirpus cyperinus	80	☑	75.5%	FACW
2.	Conoclinium coelestinum	10	☐	9.4%	FAC
3.	Solidago altissima	5	☐	4.7%	FACU
4.	Juncus effusus	5	☐	4.7%	FACW
5.	Apocynum cannabinum	3	☐	2.8%	FACU
6.	Lespedeza cuneata	2	☐	1.9%	FACU
7.	Epilobium coloratum	1	☐	0.9%	FACW
8.		0	☐	0.0%	
9.		0	☐	0.0%	
10.		0	☐	0.0%	
11.		0	☐	0.0%	
12.		0	☐	0.0%	
		106	= Total Cover		
Woody Vine Stratum	(Plot size: 30' radius)				
1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
		0	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	91	x 2 =	182	
FAC species	12	x 3 =	36	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	113	**(A)**	258	**(B)**

Prevalence Index = B/A = 2.283

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Hydrophytic vegetation indicators present, dominance test=100%, dominant species are FACW and FAC.

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

Wetland 02

Soil

Sampling Point: **W-WRL-20201001-01-P**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR	4/3	100						Sandy Loam	
3-5	10YR	3/2	70	10YR	3/4	20	C	M	Sandy Loam	
				10YR	5/6	10	C	M		
5-7	10YR	2/1	100						sandy	coal fines
7-11	10YR	5/4	70	10YR	5/6	30	C	M	Sandy Clay	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Shovel refusal at 11" due to rock. Significantly disturbed soils as reclaimed mine land, showing coal fines in narrow layer 5-7" below surface, reduced matrix (low chroma, low value) above 5" shows evidence of hydric soil indicator development.

Upland 02

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20201001-01 City/County: Vinton Sampling Date: 01-Oct-20

Applicant/Owner: AEP State: OH Sampling Point: JPL-WRL-20201001-02

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): convex Slope: 2.0 % / 63.4 °

Subregion (LRR or MLRA): LRR N Lat.: 39.37943 Long.: -82.44737 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

Sample point upl-wrl-20201001-02 is point out to wetland w-wrl-20201001-01, located about 5' east of boundary, at slightly higher elevation. Located on reclaimed mine land = significantly disturbed soils

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrology indicators present.

Upland 02

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **UPL-WRL-20201001-02**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Prunus serotina	2	☑	100.0%	FACU
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	2	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Lespedeza cuneata	60	☑	54.1%	FACU
2. Eupatorium serotinum	15	☐	13.5%	FAC
3. Solidago altissima	15	☐	13.5%	FACU
4. Setaria pumila	5	☐	4.5%	FAC
5. Conoclinium coelestinum	5	☐	4.5%	FAC
6. Sonchus oleraceus	3	☐	2.7%	UPL
7. Daucus carota	3	☐	2.7%	UPL
8. Symphyotrichum pilosum	3	☐	2.7%	FAC
9. Conyza canadensis	1	☐	0.9%	FACU
10. Vernonia gigantea	1	☐	0.9%	FAC
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	111	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	29	x 3 =	87	
FACU species	78	x 4 =	312	
UPL species	6	x 5 =	30	
Column Totals:	113	(A)	429	(B)

Prevalence Index = B/A = 3.796

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

No hydrophytic vegetation indicators present; dominance test = 0%, dominant species are FACU, prevalence index > 3.0

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

Upland 02

Soil

Sampling Point: **UPL-WRL-20201001-02**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-4	10YR	4/3	100						Sandy Loam	
4-9	2.5Y	4/4	70	2.5y	5/2	30	RM	M	Sandy Clay	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

shovel refusal at 9" due to rock. Significantly disturbed soils as reclaimed mine land, though no hydric soil indicators are developed.

Background Information

Name:	**Stacey K Mueller**
Date:	**10/1/2020**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**513-419-3450**
e-mail address:	stacey.mueler@aecom.com
Name of Wetland:	**Wetland 02**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Lat/Long or UTM Coordinate:	**39.37938 -82.44739**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**050901010202 - West Branch Raccoon Creek**
Site Visit:	**10/1/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	Wetland 02		
Wetland Size (delineated acres):	0.06	Wetland Size (Estimated total acres):	0.06

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Comments, Narrative Discussion, Justification of Category Changes:

Sample point w-wrl-20201001-01-pem is point in to wetland w-wrl-20201001, a PEM wetland located in a depression in rolling hills of reclaimed strip mine land. Drains to south to small UDF that drains to culvert under roadway to open pasture, no feature present downstream. Wetland boundary fully delineated. Reclaimed strip mine land = significantly disturbed soils.

No primary and 2 secondary hydrology indicators present due to location as a drainage swale leading into UDF to roadway culvert; no feature downstream apparent, but culvert could provide downstream connection . Primary source of hydrology is concentration surface runoff into depression area.

Final score:	34.5	Category:	1 or 2 Gray Zone

Wetland ID:	Wetland 02

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	Wetland 02

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	Wetland 02

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

Wetland ID:	Wetland 02

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland 02

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	10/1/2020

Field ID:

W-WRL-20201010-01

Delineated acres:	0.06
Total acres:	0.06

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

6.0 (max 14 pts.) | 6.0 (subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

11.0 (max 30 pts.) | 17.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] Other: strip mining

Metric 4. Habitat Alteration and Development.

12.5 (max 20 pts.) | 29.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] 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)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

29.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland 02

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	10/1/2020

Field ID:

W-WRL-20201010-01

29.5
subtotal this page

0.0 max 10 pts. | **29.5** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

5.0 max 20pts. | **34.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [0] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer 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)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

34.5 **TOTAL (Max 100 pts)**

1 or 2 Gray Zone **Category**

Wetland ID:	Wetland 02

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	6		
	Metric 3. Hydrology	11		
	Metric 4. Habitat	12.5		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	5		
	TOTAL SCORE	34.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland 02

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 02 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing North	

Wetland 02 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing East	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 02 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing South	

Wetland 02 **Date:** October 01, 2020 **Description:** PEM Category 2 Facing West	

AECOM	PHOTOGRAPHIC RECORD WETLANDS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	**Project No.** 60624128

Wetland 02	
Date: October 01, 2020	
Description: PEM Category 2 Soil Pit	

Wetland 03

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20200930-01 City/County: Vinton Sampling Date: 30-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: -WRL-20200930-01-PF

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): concave Slope: 3.0 % / 71.6 °

Subregion (LRR or MLRA): LRR N Lat.: 39.38446 Long.: -82.4497 Datum: NAD83

Soil Map Unit Name: WhL1E1 - Wharton-Latham silt loams, 25 to 40 percent slopes NWI classification: PFO1C

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	Is the Sampled Area within a Wetland? Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Data point W-WRL-20200930-01 is point in to wetland W-WRL-20200930-01, somewhat open PFO wetland in small valley bottom; obviously affected by acid mine ruonff and sedimentation, drains to east to stream S-WRL-20200930-04 with pH measured at 2.8. Historical USGS topographic maps indicate strip mine lands around and upstream of wetland. Soils problematic due to prior upslope strip mine activities, acid mine drainage limiting microbial soil activities, iron deposition from acidified groundwater at surface/upper layer presenting reddish colors. Wetland boundary fully delineated.

Hydrology

Wetland Hydrology Indicators:

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

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☑ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 1	
Water Table Present?	Yes ◉	No ○	Depth (inches): 5	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0	Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Multiple primary and secondary hydrology indicators present. Primary sources of hydrology are concentration of surface runoff and low-pH groundwater as evidenced by pH=2.8 reading in stream draining wetland. Drains to stream S-WRL-20200930-04 to east, which drains east to West Branch Racoon Creek, which drains southeast to Racoon Creek, which drains south and east to Ohio River, a TNW.

Wetland 03

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **W-WRL-20200930-01-P**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus bicolor	15	☑	45.5%	FACW
2. Betula nigra	10	☑	30.3%	FACW
3. Quercus palustris	5	☐	15.2%	FACW
4. Acer rubrum	3	☐	9.1%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	33	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Quercus bicolor	10	☑	55.6%	FACW
2. Oxydendrum arboreum	3	☐	16.7%	UPL
3. Lindera benzoin	3	☐	16.7%	FAC
4. Ulmus americana	2	☐	11.1%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	18	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Panicum dichotomiflorum	10	☑	47.6%	FACW
2. Carex grayi	5	☑	23.8%	FACW
3. Rubus idaeus	2	☐	9.5%	FAC
4. Scirpus cyperinus	2	☐	9.5%	FACW
5. Hypericum punctatum	2	☐	9.5%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	21	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	59	x 2 =	118	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	3	x 5 =	15	
Column Totals:	72	(A)	163	(B)

Prevalence Index = B/A = 2.264

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Hydrophytic vegetation indicators present, Rapid Test, dominant species are all FACW

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

Wetland 03

Soil

Sampling Point: **W-WRL-20200930-01-P**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-2	2.5YR	3/2	100					Sandy Loam	acid drainage iron transport
2-7	5YR	3/4	100					Sand	
7-19	7.5YR	5/1	100					Clay	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator present as sulfur odor present throughout wetland and stream; possibly naturally problematic soils due to very low pH groundwater from potential acid mine drainage limiting microbial activity and soils development. Very low chroma/high value matrix begins at 7 inches below surface. Above that is higher chroma soils resulting from possible sedimentation events and very limited organic breakdown.

Upland 04

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20200930-01 City/County: Vinton Sampling Date: 30-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: JPL-WRL-20200930-01

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): convex Slope: 3.0 % / 71.6 °

Subregion (LRR or MLRA): LRR N Lat.: 39.38723 Long.: -82.44999 Datum: NAD83

Soil Map Unit Name: WhL1E1 - Wharton-Latham silt loams, 25 to 40 percent slopes NWI classification: PFO1C

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

Sampling point UPL-WRL-20200930-01 is point out to wetland W-WRL-20200930-01, a PFO wetland. Point out is located about 5' north of wetland boundary on rising slope at slightly higher elevation, not affected by low-pH groundwater or acid mine drainage.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrology indicators present.

Upland 04

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **UPL-WRL-20200930-01**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus rubra	40	✔	53.3%	FACU
2. Liriodendron tulipifera	30	✔	40.0%	FACU
3. Acer saccharum	5		6.7%	FACU
4.	0		0.0%	
5.	0		0.0%	
6.	0		0.0%	
7.	0		0.0%	
8.	0		0.0%	
	75	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Carpinus caroliniana	15	✔	42.9%	FAC
2. Acer saccharum	10	✔	28.6%	FACU
3. Smilax rotundifolia	5		14.3%	FAC
4. Acer rubrum	5		14.3%	FAC
5.	0		0.0%	
6.	0		0.0%	
7.	0		0.0%	
8.	0		0.0%	
9.	0		0.0%	
10.	0		0.0%	
	35	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0		0.0%	
2.	0		0.0%	
3.	0		0.0%	
4.	0		0.0%	
5.	0		0.0%	
6.	0		0.0%	
7.	0		0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Rubus idaeus	15	✔	65.2%	FAC
2. Symphyotrichum pilosum	5	✔	21.7%	FAC
3. Cinna arundinacea	3		13.0%	FACW
4.	0		0.0%	
5.	0		0.0%	
6.	0		0.0%	
7.	0		0.0%	
8.	0		0.0%	
9.	0		0.0%	
10.	0		0.0%	
11.	0		0.0%	
12.	0		0.0%	
	23	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0		0.0%	
2.	0		0.0%	
3.	0		0.0%	
4.	0		0.0%	
5.	0		0.0%	
6.	0		0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	3	x 2 =	6	
FAC species	45	x 3 =	135	
FACU species	85	x 4 =	340	
UPL species	0	x 5 =	0	
Column Totals:	133	(A)	481	(B)

Prevalence Index = B/A = 3.617

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

No hydrophytic vegetation indicators present; dominant species are FAC and FACU, prevalence index > 3.0

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

Upland 04

Soil

Sampling Point: **UPL-WRL-20200930-01**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-18	10YR 4/3	100					Silty Clay Loam	very consistent, loose soils

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators present.

Background Information

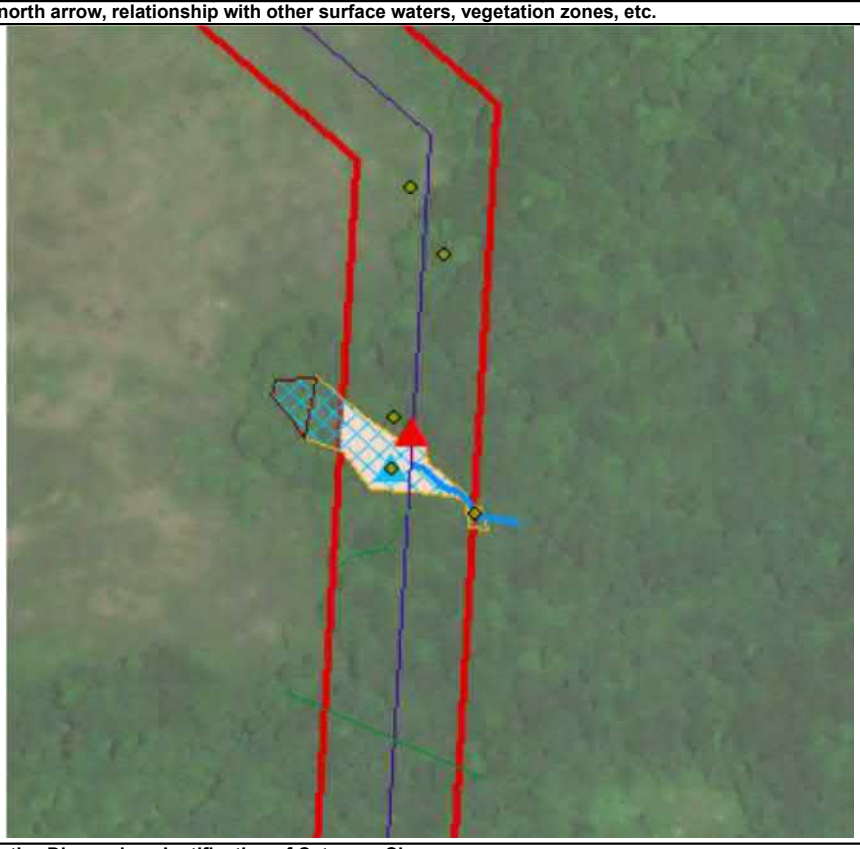
Name:	**Josiah Kleinhenz**
Date:	**9/30/2020**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**513-207-3011**
e-mail address:	josiah.kleinhenz@aecom.com
Name of Wetland:	**Wetland 03**
Vegetation Communit(ies):	**PFO**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Lat/Long or UTM Coordinate:	**39.38446, -82.4497**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**050901010202 - West Branch Raccoon Creek**
Site Visit:	**9/30/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**

Name of Wetland:	Wetland 03		
Wetland Size (delineated acres):	0.30	Wetland Size (Estimated total acres):	0.42

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

Data point W-WRL-20200930-01 is point in to wetland W-WRL-20200930-01, somewhat open PFO wetland in small valley bottom; obviously affected by acid mine ruonff and sedimentation, drains to east to stream S-WRL-20200930-04 with pH measured at 2.8. Historical USGS topographic maps indicate strip mine lands around and upstream of wetland. Soils problematic due to prior upslope strip mine activities, acid mine drainage limiting microbial soil activities, iron deposition from acidified groundwater at surface/upper layer presenting reddish colors. Wetland boundary fully delineated.

Wetland ID:	Wetland 03

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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	Wetland 03

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	Wetland 03

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

Wetland ID:	Wetland 03

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland 03

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	9/30/2020

Field ID:

W-WRL-20200930-01

Delineated acres:	0.30
Total acres:	0.42

Metric 1. Wetland Area (size).

2.0 (max 6 pts) | 2.0 (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)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

14.0 (max 14 pts.) | 16.0 (subtotal)

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

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

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

- [x] 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)

Metric 3. Hydrology.

20.0 (max 30 pts.) | 36.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [x] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] Other:

Metric 4. Habitat Alteration and Development.

14.0 (max 20 pts.) | 50.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] 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)
- [x] 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 removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

50.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland 03

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	9/30/2020

Field ID:

W-WRL-20200930-01

50.0
subtotal this page

0.0 max 10 pts. | **50.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

11.0 max 20pts. | **61.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [0] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [x] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer

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)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

61.0 TOTAL (Max 100 pts)

2 Category

Wetland ID:	Wetland 03

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**2**		
	Metric 2. Buffers and surrounding land use	**14**		
	Metric 3. Hydrology	**20**		
	Metric 4. Habitat	**14**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**11**		
	TOTAL SCORE	**61**		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland 03

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 03 **Date:** September 30, 2020 **Description:** PFO Category 3 Facing North	

Wetland 03 **Date:** September 30, 2020 **Description:** PFO Category 3 Facing East	

AECOM

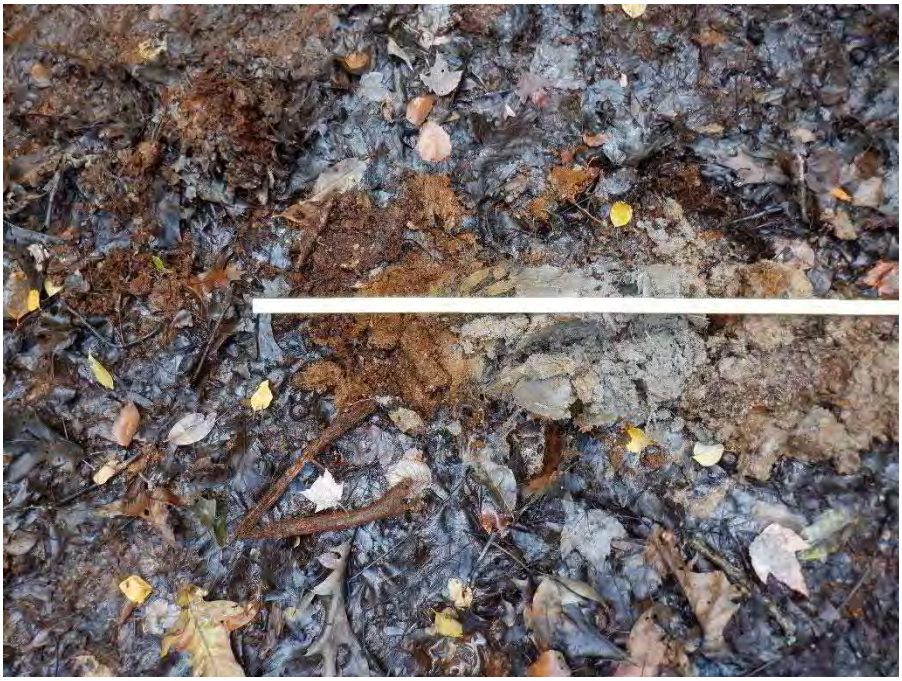
PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 03 **Date:** September 30, 2020 **Description:** PFO Category 3 Facing South	

Wetland 03 **Date:** September 30, 2020 **Description:** PFO Category 3 Facing West	

AECOM	PHOTOGRAPHIC RECORD WETLANDS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	**Project No.** 60624128

Wetland 03	
Date: September 30, 2020	
Description: PFO Category 3 Soil Pit	

Wetland 04

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20200930-02 City/County: Vinton Sampling Date: 30-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: -WRL-20200930-02-pe

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.38981 Long.: -82.4535 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	Is the Sampled Area within a Wetland? Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Sample point w-wrl-20200930-02-pem is point in to wetland W-WRL-20200930-02, a PEM wetland located in depression and swale in rolling hills landscape of reclaimed strip mine land. Wetland drains to north via UDF to larger wetland down slope that drains to east. Culvert likely provides downstream connectivity. Wetland boundary extends to SE outside of study area. Reclaimed strip mine land = significantly disturbed soils.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

One primary and multiple secondary hydrology indicators present. Primary source of hydrology is concentration of runoff in depression and swale, flowing to north off-site to steep hillside down to a larger wetland and NHD-mapped stream. Culvert likely provides downstream connectivity.

Wetland 04

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **W-WRL-20200930-02-p**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Rubus occidentalis	2	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	2	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Scirpus cyperinus	30	☑	29.7%	FACW
2. Juncus effusus	20	☑	19.8%	FACW
3. Dichanthelium dichotomum	20	☑	19.8%	FAC
4. Euthamia graminifolia	10	☐	9.9%	FAC
5. Carex lurida	10	☐	9.9%	OBL
6. Solidago rugosa	5	☐	5.0%	FAC
7. Andropogon virginicus	3	☐	3.0%	FACU
8. Symphyotrichum lateriflorum	3	☐	3.0%	FACW
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	101	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	75.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10	
FACW species	53	x 2 =	106	
FAC species	35	x 3 =	105	
FACU species	3	x 4 =	12	
UPL species	2	x 5 =	10	
Column Totals:	103	(A)	243	(B)

Prevalence Index = B/A = 2.359

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Hydrophytic vegetation indicators present, dominance test=75%, dominant species are FACW, FAC and FACU. Sphagnum moss sp. was present approximately 10% cover, not used in dominance test calculation as not a vascular plant, not identified to species.

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

Wetland 04

Soil

Sampling Point: **W-WRL-20200930-02-p**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-5	2.5Y	4/3	80	2.5Y	6/2	20	RM	M	Sandy Clay	
5-8	N	3/1	100							coal fines
8-18	2.5Y	5/2	70	2.5Y	5/6	20	C	M	Sandy Clay	mixed soils
				2.5y	4/1	10	D	M		

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

significantly disturbed soils as reclaimed mine land, showing coal fines in narrow layer 5-8" below surface, depleted matrix (low chroma, high value) below 8" shows evidence of hydric soil indicator development.

Upland 05

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project / Wetland w-wrl-20200930-02 City/County: Vinton Sampling Date: 30-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: JPL-WRL-20200930-02

Investigator(s): WRL, SKM Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): convex Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.38977 Long.: -82.45344 Datum: NAD83

Soil Map Unit Name: Bhv1B - Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

Sample point upl-wrl-20200930-02 is point out to wetland w-wrl-202000930-02, PEM wetland. Point out is approximately 10' east of boundary on slope of swale at slightly higher elevation. Not a wetland point as no wetland criteria were met. Reclaimed strip mine land = significantly disturbed soils.

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrology indicators present.

Upland 05

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **UPL-WRL-20200930-02**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Rhus typhina	3	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	3	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Andropogon virginicus	25	☑	25.0%	FACU
2. Schizachyrium scoparium	20	☑	20.0%	FACU
3. Solidago rugosa	20	☑	20.0%	FAC
4. Potentilla indica	15	☐	15.0%	FACU
5. Euthamia graminifolia	10	☐	10.0%	FAC
6. Symphyotrichum lateriflorum	10	☐	10.0%	FACW
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	10	x 2 =	20	
FAC species	30	x 3 =	90	
FACU species	60	x 4 =	240	
UPL species	3	x 5 =	15	
Column Totals:	103	(A)	365	(B)

Prevalence Index = B/A = 3.544

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

No hydrophytic vegetation indicators present; dominant species are FAC, FACU and UPL, prevalence index > 3.0

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

Upland 05

Soil

Sampling Point: **UPL-WRL-20200930-02**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-6	2.5Y	5/2	90	2.5Y	5/4	10	C	PL	Sandy Clay	faint redox concentrations
6-13	2.5Y	5/3	60	2.5Y	6/2	40	RM	M	Sandy Clay	
13-15	2.5Y	3/1	95	2.5Y	5/3	5	C	M	Coarse Sand	coal fines present

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators present. Soils significantly disturbed due to reclaimed strip mine land, imported soils may have some relict hydric characteristics still present (low chroma with faint redox concentrations, not distinct or prominent).

Background Information

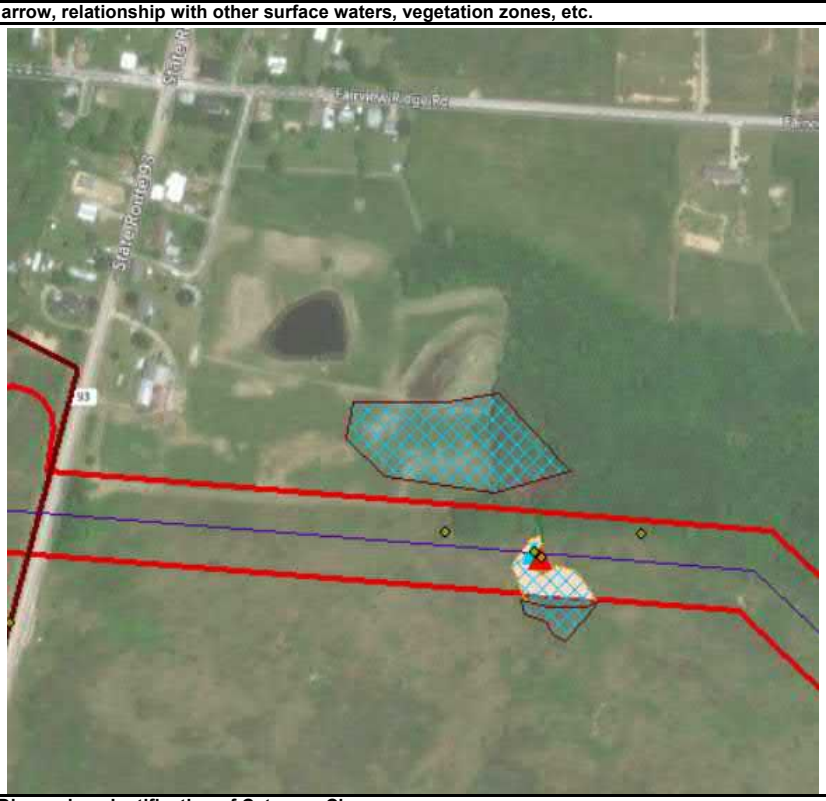
Name:	**Stacey K Mueller**
Date:	**9/30/2020**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**513-419-3450**
e-mail address:	stacey.mueler@aecom.com
Name of Wetland:	**Wetland 04**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Lat/Long or UTM Coordinate:	**39.38981 -82.4535**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**050901010202 - West Branch Raccoon Creek**
Site Visit:	**9/30/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**
Name of Wetland:	**Wetland 04**

Name of Wetland:	Wetland 04		
Wetland Size (delineated acres):	0.31	Wetland Size (Estimated total acres):	0.58

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

Sample point w-wrl-20200930-02-pem is point in to wetland W-WRL-20200930-02, a PEM wetland located in depression and swale in rolling hills landscape of reclaimed strip mine land. Wetland drains to north via UDF to larger wetland down slope that drains to east. Culvert likely provides downstream connectivity. Wetland boundary extends to SE outside of study area. Reclaimed strip mine land = significantly disturbed soils.
One primary and multiple secondary hydrology in flowing to north off-site to steep hillside down to a larger wetland and NHD-mapped stream.

Final score:	45	Category:	2

Wetland ID:	Wetland 04

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	Wetland 04

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	Wetland 04

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

Wetland ID:	Wetland 04

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris differmis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland 04

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	9/30/2020

Field ID:

W-WRL-20200930-02

Delineated acres:	0.31
Total acres:	0.58

Metric 1. Wetland Area (size).

2.0 (max 6 pts) | 2.0 (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)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

13.0 (max 14 pts.) | 15.0 (subtotal)

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

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

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

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] 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)

Metric 3. Hydrology.

11.0 (max 30 pts.) | 26.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] Other: strip mining

Metric 4. Habitat Alteration and Development.

13.0 (max 20 pts.) | 39.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] 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)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

39.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland 04

Site:	AEP Ilesboro 138 kV Project	Rater(s):	Stacey K Mueller	Date:	9/30/2020

Field ID:

W-WRL-20200930-02

39.0 subtotal this page

0.0 max 10 pts. **39.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6.0 max 20pts. **45.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
0	Shrub
	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
x	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

0

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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

45.0 **TOTAL (Max 100 pts)**

2 **Category**

Wetland ID:	Wetland 04

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	13		
	Metric 3. Hydrology	11		
	Metric 4. Habitat	13		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	6		
	TOTAL SCORE	45		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland 04

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 04 **Date:** September 30, 2020 **Description:** PEM Category 2 Facing North	

Wetland 04 **Date:** September 30, 2020 **Description:** PEM Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 04 **Date:** September 30, 2020 **Description:** PEM Category 2 Facing South	

Wetland 04 **Date:** September 30, 2020 **Description:** PEM Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Illesboro South Central Power 138kV Transmission Line Rebuild Project	60624128

Wetland 04

Date:

September 30, 2020

Description:

PEM

Category 2

Soil Pit

Upland 03

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Ilesboro 138 kV Project | City/County: Vinton | Sampling Date: 01-Oct-20

Applicant/Owner: AEP | State: OH | Sampling Point: JPL-WRL-20201001-01

Investigator(s): WRL, SKM | Section, Township, Range: S 3 T 12N R 17W

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): concave | Slope: 5.0 % / 78.7 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.37961 | Long.: -82.44981 | Datum: NAD83

Soil Map Unit Name: WhL1D1 - Wharton-Latham silt loams, 15 to 25 percent slopes | NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Sample point upl-wrl-20201001-01 is in a swale area with wet-loving vegetation present investigated for wetland conditions, not a wetland point as it does not meet all 3 criteria. Drains to south to a UDF that enters a culvert under roadway to pasture downstream (no feature present).

Hydrology

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

No primary and 2 secondary hydrology indicators present due to location as a drainage swale leading into UDF that looks like it was excavated by hand to improve drainage to roadway culvert, no feature downstream. Primary source of hydrology is surface runoff and concentration.

Upland 03

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: **UPL-WRL-20201001-01**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Ulmus rubra	2	☐	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	2	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' radius)				
1. Rubus occidentalis	15	☑	34.9%	UPL
2. Elaeagnus umbellata	10	☑	23.3%	UPL
3. Sambucus nigra	10	☑	23.3%	FAC
4. Rosa multiflora	5	☐	11.6%	FACU
5. Carya ovata	3	☐	7.0%	FACU
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	43	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' radius)				
1. Dichanthelium clandestinum	20	☑	25.0%	FAC
2. Rubus occidentalis	15	☑	18.8%	UPL
3. Impatiens capensis	10	☑	12.5%	FACW
4. Solidago altissima	10	☑	12.5%	FACU
5. Eutrochium maculatum	10	☑	12.5%	FACW
6. Verbesina alternifolia	5	☐	6.3%	FAC
7. Oxalis stricta	5	☐	6.3%	FACU
8. Calystegia sepium	5	☐	6.3%	FAC
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	80	= Total Cover		
Woody Vine Stratum (Plot size: 30' radius)				
1. Toxicodendron radicans	20	☑	80.0%	FAC
2. Vitis aestivalis	5	☑	20.0%	FACU
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	25	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 10 (B)

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	62	x 3 =	186	
FACU species	28	x 4 =	112	
UPL species	40	x 5 =	200	
Column Totals:	150	(A)	538	(B)

Prevalence Index = B/A = 3.587

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

No hydrophytic vegetation indicators present; dominance test = 50%, dominant species are FACW, FAC, FACU and UPL, prevalence index > 3.0

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

Upland 03

Soil

Sampling Point: **UPL-WRL-20201001-01**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-18	2.5Y	4/3	100						Sandy Loam	
18-26	2.5Y	4/3	80	2.5Y	4/1	20	RM	M	Sandy Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils [3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators present.

APPENDIX C

PROJECT STREAM TABLE

ILESBORO PROJECT
STREAM TABLE

3/18/2022

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing?	Proposed Impacts	
	Latitude	Longitude						Method	Score	Category / Rating / OAC Designation			Fill Type	Length (LF)
Stream 01	39.383221	-82.450422	Ephemeral	UNT to West Branch Raccoon Creek	82	3.5	1.6	HHEI	27	Modified Class I	Eligible	TBD	TBD	N/A
Stream 02	39.383661	-82.450270	Perennial	UNT to West Branch Raccoon Creek	208	7.1	6	HHEI	71	Class III	Eligible	TBD	TBD	N/A
Stream 03	39.384453	-82.450244	Perennial	UNT to West Branch Raccoon Creek	251	14.3	7.2	HHEI	73	Class III	Eligible	TBD	TBD	N/A
Stream 04	39.387000	-82.449836	Perennial	UNT to West Branch Raccoon Creek	114	16	14.7	HHEI	77	Class III	Eligible	TBD	TBD	N/A
				Total:	**655**									**0**

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

APPENDIX D

OEPA STREAM DATA FORMS

DELINEATED FEATURES PHOTOGRAPHS (STREAMS)

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3): 27

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project / S-WRL-20200930-01

SITE NUMBER: S-001 RIVER BASIN: S.E. Ohio Tributaries RIVER CODE: _____ DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 82 LAT: 39.38217 LONG: -82.45042 RIVER MILE: 0.0

DATE: 9/30/20 SCORER: BL COMMENTS: ephemeral, channel dissipates prior to downstream confluence

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 present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	40%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00%

Substrate Percentage Check: 100%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: **12**

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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 [5pts]
- ☑ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHW = 1.6'w x 0.6'd

MAXIMUM POOL DEPTH (centimeters): 0.00

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: BF = 3.5'w x 1.1'd

AVERAGE BANKFULL WIDTH (meters): 1.10

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: wooded hillside

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: no recent heavy rains

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

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: West Branch Racoon Creek Distance from Evaluated Stream 0.85

☐ 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: New Plymouth NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Vinton Township/City: Swan

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 9/28/20 Quantity: 0.49

Photo-documentation Notes: 3567-upstream, 3568-downstream, 3569-substrates

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

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

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

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

Additional comments/description of pollution impacts: stream channel ends at old road bed, evidence of flow continues

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

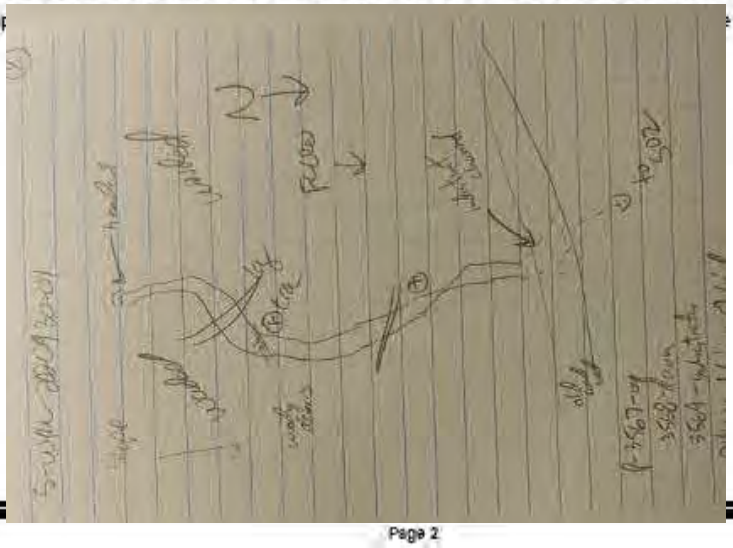
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: none present

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

Include imp … description of the stream's location

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	60624128

Stream 01
Date: September 30, 2020
Description: Ephemeral Modified Class I PHW Facing Upstream

Stream 01
Date: September 30, 2020
Description: Ephemeral Modified Class I PHW Facing Downstream

AECOM	PHOTOGRAPHIC RECORD STREAMS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	**Project No.** 60624128

Stream 01	
Date: September 30, 2020	
Description: Ephemeral Modified Class I PHW Substrate	

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) **23**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project / S-WRL-20200930-02

SITE NUMBER: S-002 RIVER BASIN: S.E. Ohio Tributaries RIVER CODE: _____ DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT: _____ LONG: -82.45028 RIVER MILE: 0.04

DATE: 9/30/20 SCORER: BL COMMENTS: perennial

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 present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	2%	☐☐	SILT [3 pt]	5%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐☐	BEDROCK [16 pts]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	5%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	32%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	50%	☐☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **7.00%**

Substrate Percentage Check: 99%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) **17**

TOTAL NUMBER OF SUBSTRATE TYPES: (B) **6**

HHEI Metric Points

Substrate Max = 40

23

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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 [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHW = 6'w x 1.4'd

MAXIMUM POOL DEPTH (centimeters): 24.00

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: BF = 7.1'w x 1.6'd

AVERAGE BANKFULL WIDTH (meters): 2.20

Bankfull Width Max=30

0

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

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS: wooded hillside

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: heavy rains 2 days prior

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☐ No QHEI Score ________ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: West Branch Racoon Creek — Distance from Evaluated Stream 0.8

☐ 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: New Plymouth   NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Vinton   Township/City: Swan

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y   Date of last precipitation: 9/28/20   Quantity: 0.49

Photo-documentation Notes: 2574-upstream, 2575-downstream, 2576-substrates

Elevated Turbidity? (Y/N): N   Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N   Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) 13.3   Dissolved Oxygen (mg/l) ________   pH (S.U.) 3.3   Conductivity (umhos/cm) ________

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

stream substrates with orange tint

Additional comments/description of pollution impacts: former strip mine lands upstream all around

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N   Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N   Species observed (if known): ________

Salamanders Observed? (Y/N) N   Species observed (if known): ________

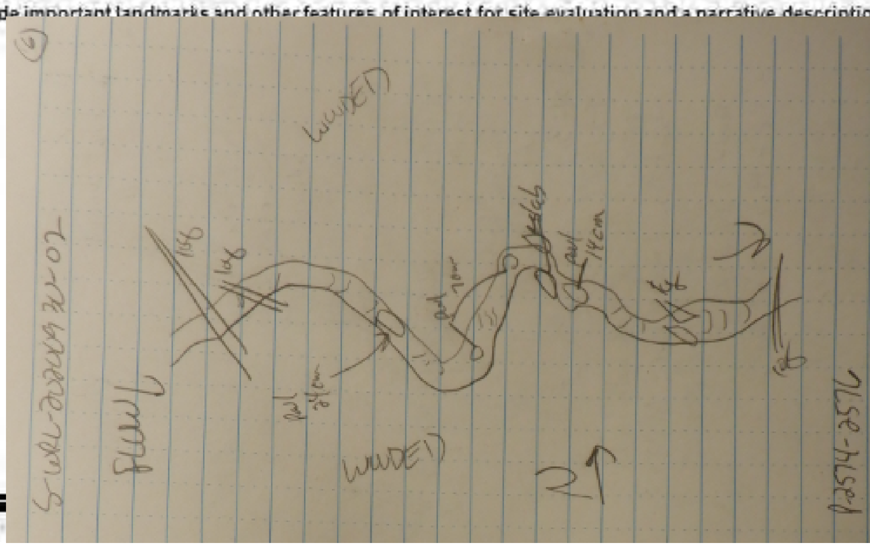
Aquatic Macroinvertebrates Observed? (Y/N) N   Species observed (if known): ________

Comments Regarding Biology: none present, suspect acid mine drainage effects

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	60624128

Stream 02 **Date:** September 30, 2020 **Description:** Intermittent Class III PHW Facing Upstream	

Stream 02 **Date:** September 30, 2020 **Description:** Intermittent Class III PHW Facing Downstream	

AECOM	PHOTOGRAPHIC RECORD STREAMS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	**Project No.** 60624128

Stream 02	
Date: September 30, 2020	
Description: Intermittent Class III PHW Substrate	

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3): 23

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project / S-WRL-20200930-02

SITE NUMBER: S-002 | RIVER BASIN: S.E. Ohio Tributaries | RIVER CODE: | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT: | LONG: -82.45028 | RIVER MILE: 0.04

DATE: 9/30/20 | SCORER: BL | COMMENTS: perennial

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 present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	2%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	32%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 7.00%

Substrate Percentage Check: 99%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 17

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points — Substrate Max = 40: 23 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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 [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHW = 6'w x 1.4'd

MAXIMUM POOL DEPTH (centimeters): 24.00

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: BF = 7.1'w x 1.6'd

AVERAGE BANKFULL WIDTH (meters): 2.20

Bankfull Width Max=30: 0

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

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS: wooded hillside

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: heavy rains 2 days prior

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☐ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: West Branch Racoon Creek Distance from Evaluated Stream 0.8

☐ 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: New Plymouth NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Vinton Township/City: Swan

MISCELLANEOUS

Base Flow Conditions? (Y/N): Yes Date of last precipitation: 9/28/20 Quantity: 0.49

Photo-documentation Notes: 2574-upstream, 2575-downstream, 2576-substrates

Elevated Turbidity? (Y/N): No Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): No Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) 13.3 Dissolved Oxygen (mg/l) _____ pH (S.U.) 3.3 Conductivity (umhos/cm) _____

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

stream substrates with orange tint

Additional comments/description of pollution impacts: former strip mine lands upstream all around

Overall Stability of BOTH Stream Banks (check one): Stable ✔ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) No Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) No Species observed (if known): _____

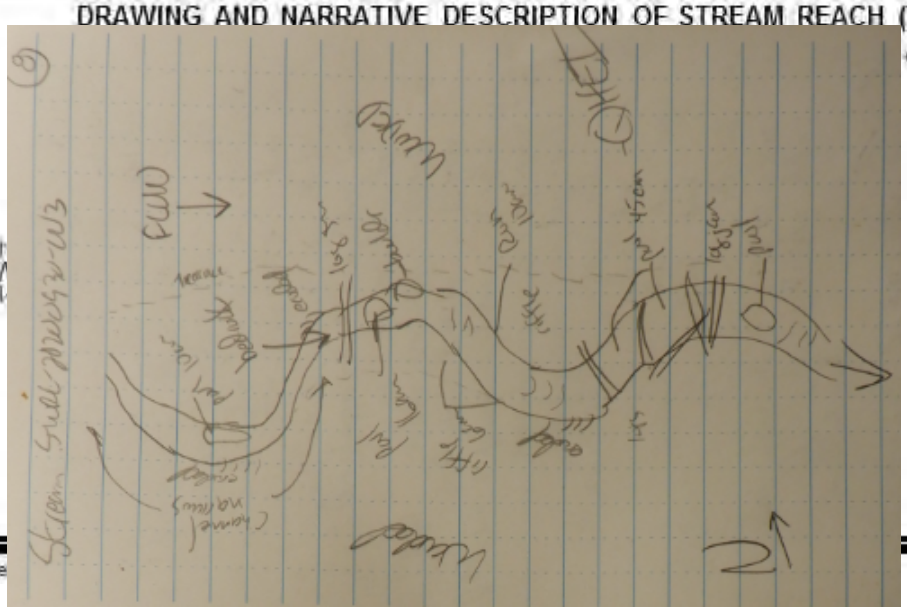
Salamanders Observed? (Y/N) No Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) No Species observed (if known): _____

Comments Regarding Biology: none present, suspect acid mine drainage effects

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

description of the stream's location



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	60624128

Stream 03

Date:

September 30, 2020

Description:

Intermittent

Class III PHW

Facing Upstream

Stream 03

Date:

September 30, 2020

Description:

Intermittent

Class III PHW

Facing Downstream

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	60624128

Stream 03

Date:

September 30, 2020

Description:

Intermittent

Class III PHW

Substrate

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3): 23

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project / S-WRL-20200930-02

SITE NUMBER: S-002 | RIVER BASIN: S.E. Ohio Tributaries | RIVER CODE: | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT: | LONG: -82.45028 | RIVER MILE: 0.04

DATE: 9/30/20 | SCORER: BL | COMMENTS: perennial

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 present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	2%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	32%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **7.00%**

Substrate Percentage Check: 99%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) **17**

TOTAL NUMBER OF SUBSTRATE TYPES: (B) **6**

HHEI Metric Points — Substrate Max = 40

23 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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 [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHW = 6'w x 1.4'd

MAXIMUM POOL DEPTH (centimeters): 24.00

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: BF = 7.1'w x 1.6'd

AVERAGE BANKFULL WIDTH (meters): 2.20

Bankfull Width Max=30

0

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

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS: wooded hillside

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: heavy rains 2 days prior

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☐ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: West Branch Racoon Creek Distance from Evaluated Stream 0.8

☐ 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: New Plymouth NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Vinton Township/City: Swan

MISCELLANEOUS

Base Flow Conditions? (Y/N): Yes Date of last precipitation: 9/28/20 Quantity: 0.49

Photo-documentation Notes: 2574-upstream, 2575-downstream, 2576-substrates

Elevated Turbidity? (Y/N): No Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): No Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) 13.3 Dissolved Oxygen (mg/l) _____ pH (S.U.) 3.3 Conductivity (umhos/cm) _____

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

stream substrates with orange tint

Additional comments/description of pollution impacts: former strip mine lands upstream all around

Overall Stability of BOTH Stream Banks (check one): Stable ✔ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) No Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) No Species observed (if known): _____

Salamanders Observed? (Y/N) No Species observed (if known): _____

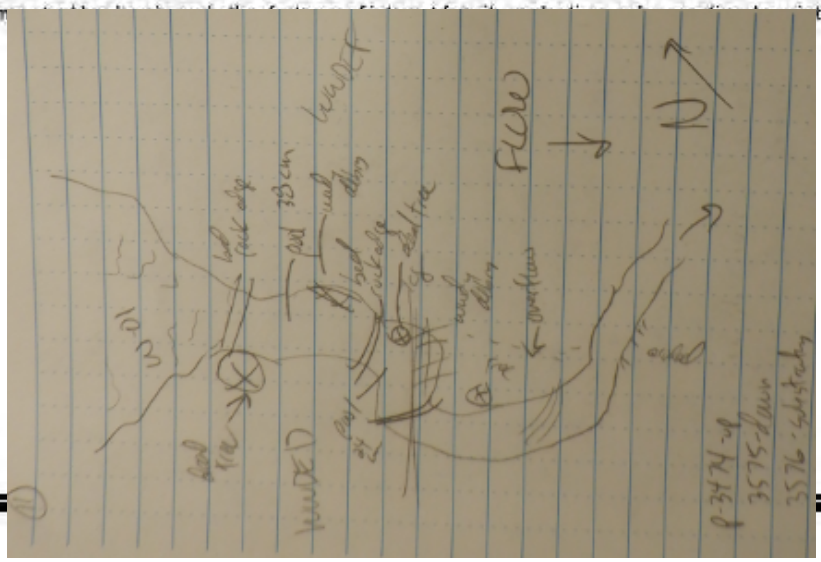
Aquatic Macroinvertebrates Observed? (Y/N) No Species observed (if known): _____

Comments Regarding Biology: none present, suspect acid mine drainage effects

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

Include im... tion of the stream's location

FLOW



PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	60624128

Stream 04 **Date:** September 30, 2020 **Description:** Intermittent Class III PHW Facing Upstream	

Stream 04 **Date:** September 30, 2020 **Description:** Intermittent Class III PHW Facing Downstream	

AECOM	PHOTOGRAPHIC RECORD STREAMS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project	**Project No.** 60624128

Stream 04 **Date:** September 30, 2020 **Description:** Intermittent Class III PHW Substrate	

APPENDIX E

HABITAT PHOTOGRAPHS

AECOM

PHOTOGRAPHIC RECORD
HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60582598

Photo 1 **Date:** September 30, 2020 **Description:** Grassland habitat within proposed ROW Facing Northeast	

Photo 2 **Date:** September 30, 2020 **Description:** Hay field/pasture habitat within proposed ROW Facing South	

AECOM

PHOTOGRAPHIC RECORD
HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60582598

Photo 3 **Date:** October 1, 2020 **Description:** Old field habitat within proposed ROW Facing North	

Photo 4 **Date:** October 1, 2020 **Description:** Landscaped area habitat within proposed ROW Facing East	

AECOM

PHOTOGRAPHIC RECORD
HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60582598

Photo 5 **Date:** November 21, 2018 **Description:** Mixed mesophytic forest habitat within proposed ROW Facing West	

Photo 6 **Date:** October 1, 2020 **Description:** Scrub-shrub habitat within proposed ROW Facing West	

APPENDIX F

AGENCY CORRESPONDENCE

Ohio Department of Natural Resources
MIKE DEWINE, GOVERNOR
MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

October 19, 2020

Stacey Mueller
AECOM
525 Vine Street
Cincinnati, Ohio 45202

Re: 20-806; Fiddlestix Switch-Illesboro South Central 138 kV Transmission Line Project

Project: The proposed project involves installing approximately 1.5 miles of greenfield 138 kV transmission line to tie the new Illesboro delivery point to the Lemaster-Ross 138 kV circuit and the installation of a new three-way phase over phase 138 kV switch to serve the new Illesboro delivery point.

Location: The proposed project is located in Swan Township, Vinton County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of little spectaclecase (*Villosa lienosa*), a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

Mueller, Stacey

From: Ohio, FW3 <ohio@fws.gov>
Sent: Wednesday, October 7, 2020 2:56 PM
To: Mueller, Stacey
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate; todd.hess@usda.gov; katrina.schultes@usda.gov
Subject: [EXTERNAL] AEP Fiddlestix Switch-Illesboro South Central 138 kV Transmission Line Project in Vinton County, Ohio

Follow Up Flag: Follow up
Flag Status: Flagged

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS #03E15000-2021-TA-0064

Dear Ms. Mueller,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. It appears that this project may cross the Wayne National Forest and a federal authorization from the Forest Service may be required. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA) on both private and federal property.

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year (see exception below). Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer surveys may only be conducted between June 1 and August 15. However, for all projects that cross the Wayne National Forest and require Forest Service authorization, seasonal tree clearing is still required (regardless of presence/absence survey results) to be in compliance with the Land and Resource Management Plan (i.e., the Forest Plan). If meeting timing restrictions is a concern, contact the Wayne National Forest as early as possible for more information on the process and potential alternatives.

The proposed project lies within the range of the endangered **running buffalo clover** (Trifolium stoloniferum). Known locations of this plant occur within the same township as the proposed project. This plant can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. If suitable habitat is present, we recommend that surveys for this species be conducted by a trained botanist in May or June when the plant is in flower. The survey must be coordinated with the Ohio Field Office in advance.

Surveys for Federally Listed Plant Species: Federally listed plants are always protected on federal property under the ESA. Please be aware that for projects on the Wayne National Forest that require federal authorization, you may be requested to provide additional information on the potential of the project area to provide habitat for running buffalo clover (Trifolium stoloniferum), small whorled pogonia (Isotria medeoloides), northern monkshood (Aconitum noveboracense), and Virginia spiraea (Spiraea virginiana). In addition, season-specific surveys for these species may also be requested by the Forest Service to ensure compliance with the ESA and the Forest Plan.

Section 7 Coordination: If this project crosses the Wayne National Forest and requires federal authorization, or if there is another federal nexus for the project (e.g., federal funding provided, federal permits required), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is

completed. We recommend the federal action agency submit a determination of effects to this office, relative to federally listed bats and plants, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources and the Wayne National Forest due to the potential for the proposed project to affect state listed species and/or state and federal lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us. For projects on Wayne National Forest we recommend that you contact Todd Hess at (740) 753-0980 or at todd.hess@usda.gov.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice M. Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Todd Hess, WNF
Katrina Schultes, WNF

APPENDIX G

DESKTOP ASSESSMENT FOR WINTER BAT HABITAT

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE

VINTON COUNTY, OHIO

DESKTOP ASSESSMENT FOR WINTER BAT HABITAT

Prepared for:

American Electric Power Ohio Transmission Company

8600 Smith Mill Road

New Albany, Ohio 43054

Prepared by:

AECOM

525 Vine Street, Suite 1800

Cincinnati, Ohio 45202

Project #: 60624128

March 2022

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LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to install approximately 1.8 miles of greenfield 138 kV transmission line in Vinton County, Ohio (Project). The greenfield route is to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit. Approximately 0.01 mile of 138 kV line on the existing Poston-Ross 138 kV Transmission Line is also included in the Project. The Project is located on New Plymouth, Ohio U.S. Geologic Survey 7.5" topographic quadrangle (Appendix A, Figure 1 – Agency Overview Map).

The Project is designed to be predominately within the former maintained transmission line ROW located mostly within agricultural fields, grassy area, and old fields. AEP Ohio Transco plans to utilize new and existing access roads to the transmission line ROW. The Project is mostly located within open land which will not require tree clearing; however, some portions of the ROW will cross forested habitats and tree clearing will be required for the Project. AEP Ohio Transco intends for tree clearing activities to occur between October 1st and March 31st to avoid adverse effects to state and/or federally listed bat species during the active (non-hibernating) season.

2.0 METHODS

AECOM reviewed publicly available data to identify underground voids which could be potential hibernation sites for overwintering bats (hibernacula). Typical hibernation sites for the *Myotis* bats native to Ohio include natural karst caves/sinkholes, underground mines with exposed entrances/air vents, and other underground voids which maintain suitable temperatures, humidity, and air circulation throughout the winter months. To identify such features, AECOM reviewed the following desktop resources:

- USGS topographical maps (U.S. Geological Survey, 2019 and USGS 2016)
- Aerial photography (ESRI, 2020)
- USFWS Technical Assistance (Attachment B)
- ODNR Guidance Letter (Attachment A)
- ODNR Division of Mineral Resources and Geological Survey data for:
    - Known mining activity (ODNR, 2020a)
    - Karst geology and sinkholes (ODNR, 2020b)

AECOM compared the Project area and 0.25-mile buffer to the information provided by each of these resources and reviewed them for indications of likely underground voids. Figure 2 – USGS Topographical Map shows the Project and its 0.25-mile buffer on a USGS background. Figure 3 – Known Mining Activity Map depicts the Project and its 0.25-mile buffer in relation to known records of mining activity as recorded by the ODNR. Figure 4 – Karst Geology and Sinkholes Map depicts the Project and its 0.25-mile buffer with

known locations of karst geology and sinkholes. Aerial photography is shown as the background in Figure 3 and Figure 4.

3.0 RESULTS

Based on the available desktop resources, two underground mine locations of unknown extent were identified within 0.25-mile of the Project. These Underground Mine location points are within documented surface coal mine operations. ODNR mining records also indicate that three historic surface mines are present in the Project survey corridor; however, these features are unlikely provide suitable winter hibernaculum for *Myotis* bat species (Figure 3 – Known Mining Activity Map).

Review of the ODNR Karst Interactive Map identified no karst features within 0.25-mile of the Project area (Figure 4 – Karst Geology and Sinkholes Map).

4.0 CONCLUSION AND DISCUSSION

AECOM completed the due diligence winter bat habitat desktop assessment in February 2022. As result, two records of underground mines or mine openings were identified within 0.25-mile of the Project. These points are within mapped surface coal mine operations. No karst features are located within the survey area or within a 0.25-mile buffer around it. Project activities are unlikely to significantly affect any potential hibernacula associated with karst features outside of a 0.25-mile buffer of the Project survey corridor.

The proposed clearing activities for the Project are associated with minor vegetation removal of saplings, shrubs, minor side-trimming, as well as limited amounts of tree clearing within forested habitats. None of the areas of significant tree clearing are within 0.25-mile of the underground mines identified during the desktop assessment. Within 0.25-mile of the underground mines, the Project is located within open habitats or co-located with existing utility and road corridors. Therefore, no adverse effects to overwintering bat populations are likely to occur. Representative photographs of the habitat within the Project area are provided as Attachment C and locations of photographs are displayed on Figure 5: Photograph Location Map.

5.0 LITERATURE CITED

ESRI, 2020. World Imagery obtained from Earthstar Geographics (TerraColor NextGen) imagery.

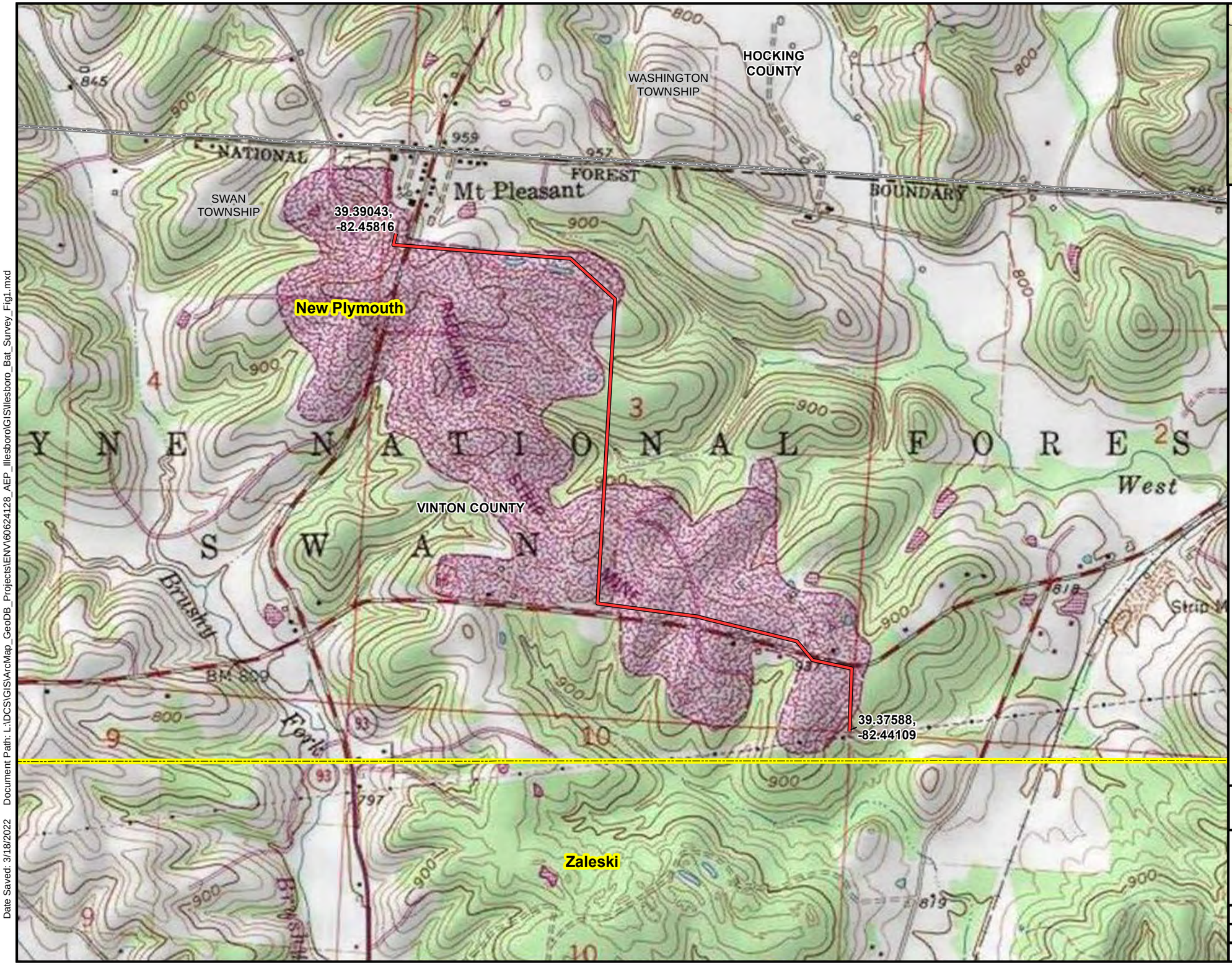
Ohio Department of Natural Resources. 2020a. Division of Mineral Resources and Geological Survey, Mines of Ohio Interactive Map access at https://gis.ohiodnr.gov/MapViewer/?config=OhioMines on February 18, 2022.

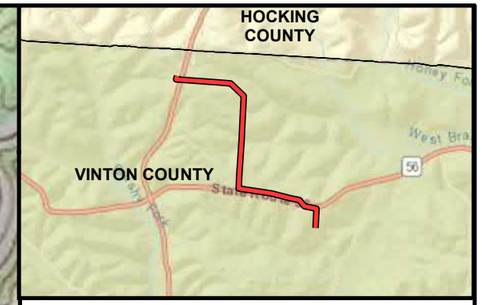
Ohio Department of Natural Resources. 2020b. Division of Geological Survey, Karst Interactive Map access at https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/ on February 18, 2022.

U.S. Geological Survey, 2019. USGS US Topo 7.5-minute maps for New Plymouth, OH 2019: USGS - National Geospatial Technical Operations Center (NGTOC).

U.S. Geological Survey, 2016. USGS US Topo 7.5-minute maps for Zaleski, OH 2016: USGS - National Geospatial Technical Operations Center (NGTOC).

FIGURES





Legend

- Proposed Ilesboro 138kV Transmission Line
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 500 1,000 2,000

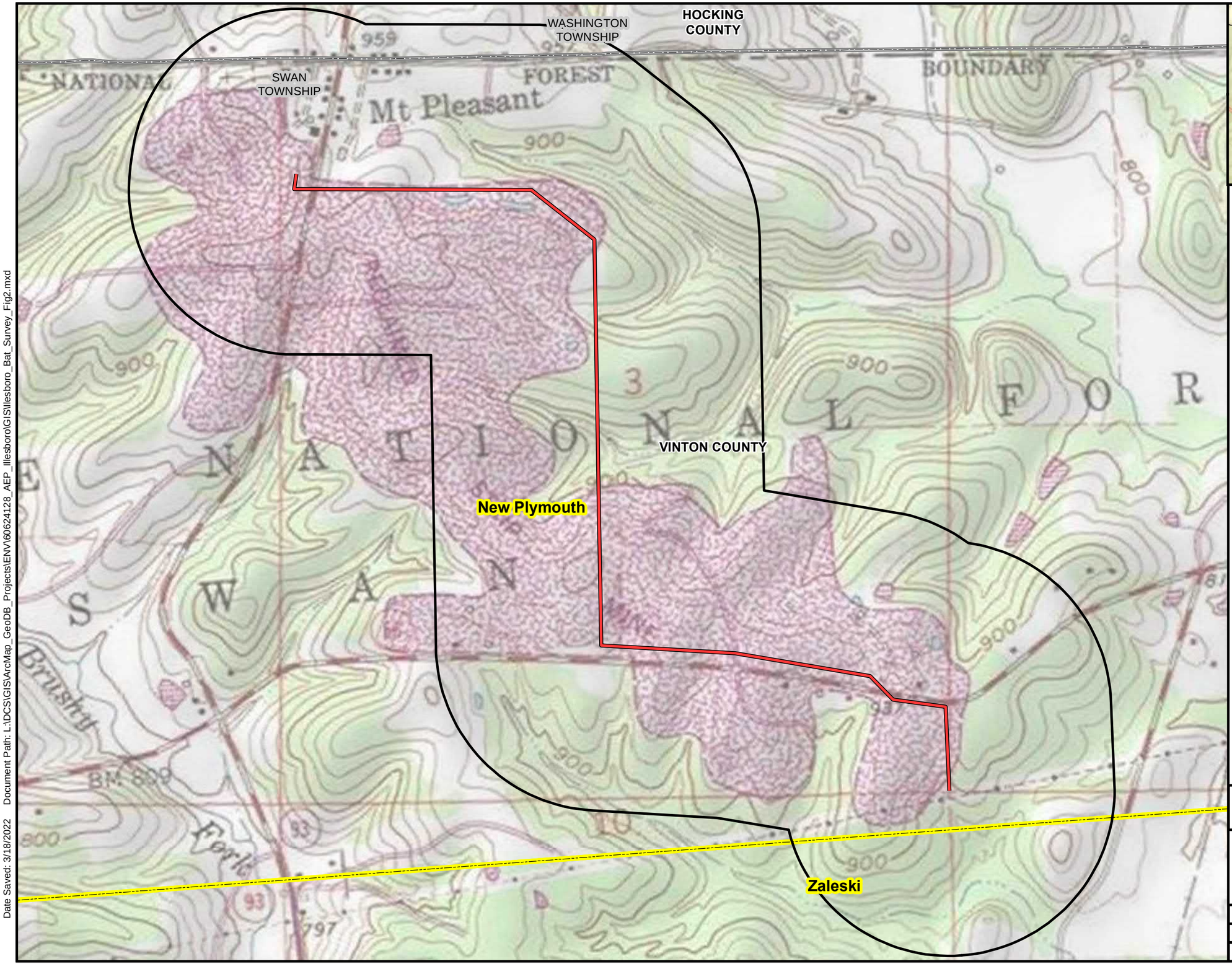
Feet

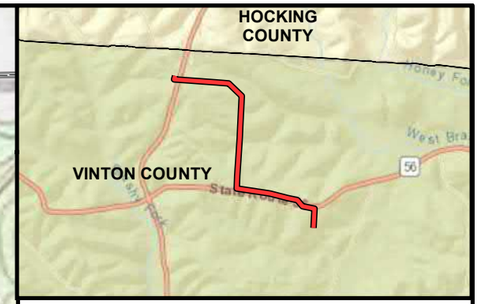
Fiddlestix Switch-Ilesboro South Central Power 138kV Transmission Line

FIGURE 1
PROJECT OVERVIEW

DATE: 3/18/2022	1 INCH = 1,000 FEET
CREATED BY: PMH	CHECKED BY: NAB
JOB NO. 60624128	AECOM

Date Saved: 3/18/2022 Document Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_Bat_Survey_Fig1.mxd





Legend

- Proposed Ilesboro 138kV Transmission Line
- Survey Area Quarter Mile Buffer
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 375 750 1,500

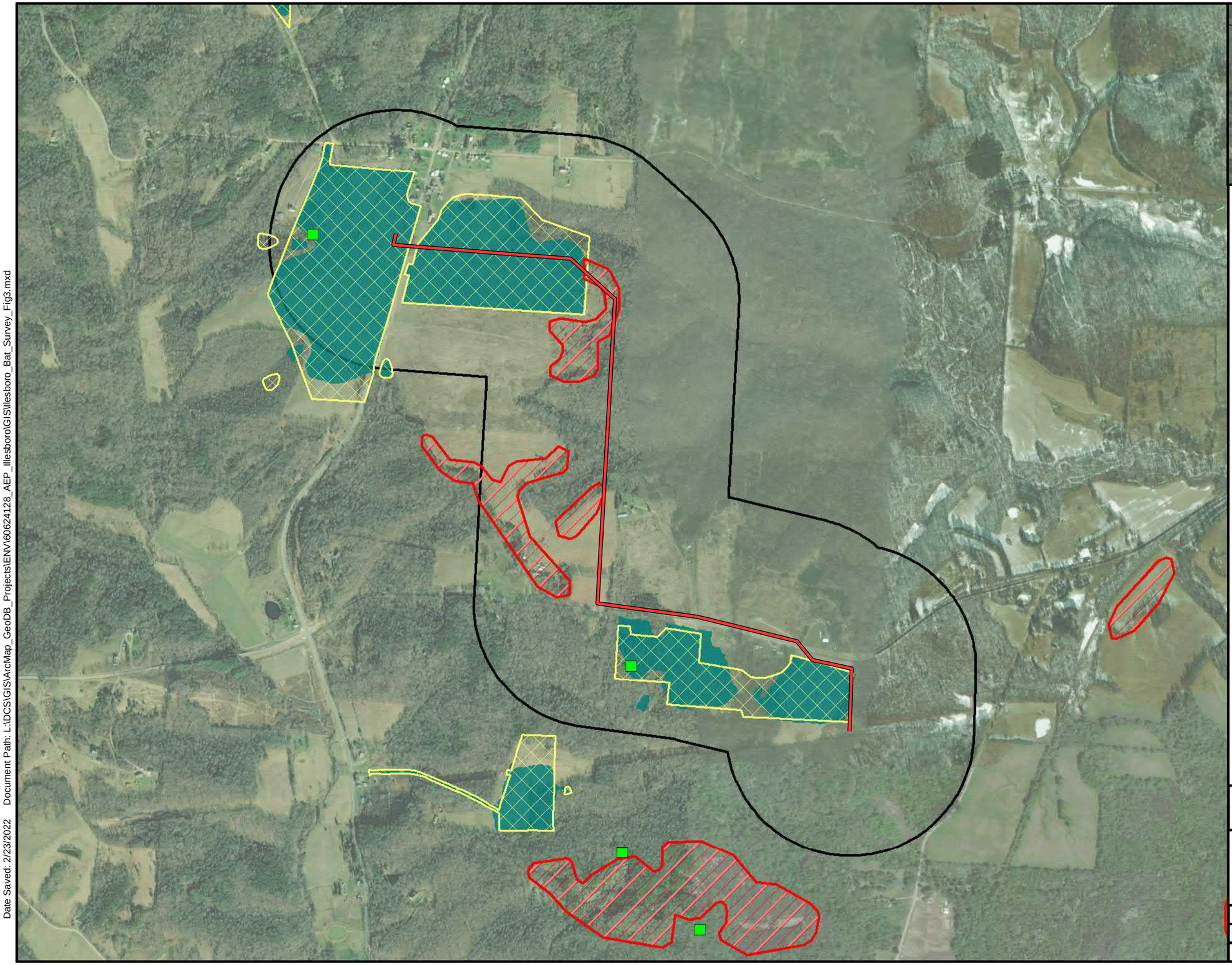
Feet

Fiddlestix Switch-Ilesboro South
Central Power 138kV Transmission Line

FIGURE 2
USGS TOPOGRAPHICAL MAP

DATE: 3/18/2022	1 INCH = 750 FEET
CREATED BY: PMH	CHECKED BY: NAB
JOB NO. 60624128	AECOM

Date Saved: 3/18/2022 Document Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_IllesboroVGIS\Illesboro_Bat_Survey_Fig2.mxd



Legend

- Underground Mine Location of Unknown Extent
- Proposed Ilesboro 138kV Transmission Line
- Historic Coal Surface Mine
- Surface Coal Mine Operation
- Land Reclamation Area
- Survey Area Quarter Mile Buffer

N

0 500 1,000 2,000

Feet

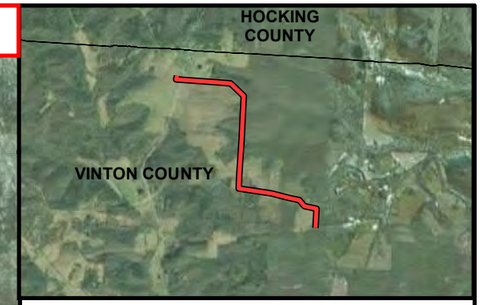
Fiddlestix Switch-Ilesboro South
Central Power 138kV Transmission Line

FIGURE 3
KNOWN MINING ACTIVITY MAP

DATE: 3/18/2022	1 INCH = 1,000 FEET
CREATED BY: PMH	CHECKED BY: NAB
JOB NO. 60624128	AECOM

Date Saved: 2/23/2022 Document Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_Bat_Survey_Fig3.mxd

No known karst geology or sinkholes are within the extent of the map frame.



Legend

- Proposed Ilesboro 138kV Transmission Line
- Survey Area Quarter Mile Buffer

N

0 500 1,000 2,000

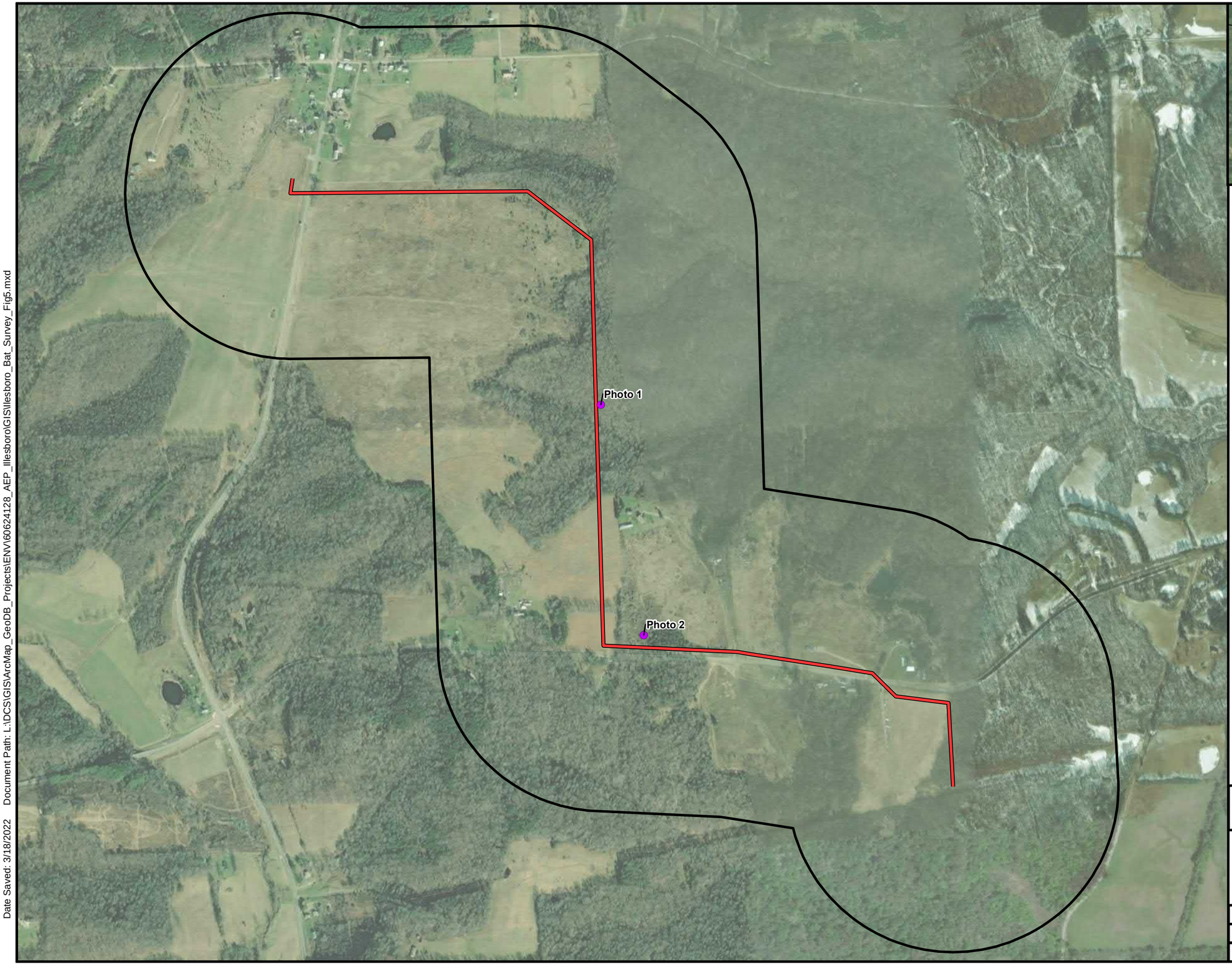
Feet

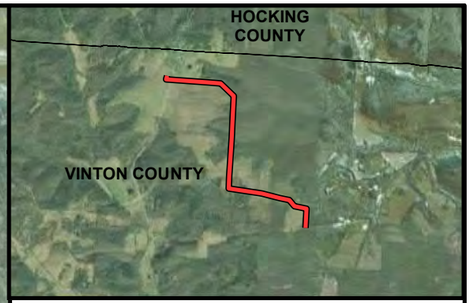
Fiddlestix Switch-Ilesboro South
Central Power 138kV Transmission Line

FIGURE 4
KARST GEOLOGY AND
SINKHOLES MAP

DATE: 3/18/2022	1 INCH = 1,000 FEET
CREATED BY: PMH	CHECKED BY: NAB
JOB NO. 60624128	AECOM

Date Saved: 3/18/2022 Document Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_Bat_Survey_Fig4.mxd





Legend

- Photo Location
- Proposed Ilesboro 138kV Transmission Line
- Survey Area Quarter Mile Buffer

N

0 375 750 1,500

Feet

Fiddlestix Switch-Ilesboro South
Central Power 138kV Transmission Line

FIGURE 5
PHOTOGRAPH LOCATION MAP

DATE: 3/18/2022	1 INCH = 750 FEET
CREATED BY: PMH	CHECKED BY: NAB
JOB NO. 60624128	AECOM

Date Saved: 3/18/2022 Document Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_Bat_Survey_Fig5.mxd

ATTACHMENT A:

ODNR ENVIRONMENTAL REVIEW – 20-806; AEP FIDDLESTIX-ILESBORO SOUTH 138 KV TRANSMISSION LINE PROJECT

DATED OCTOBER 19, 2020

Ohio Department of Natural Resources
MIKE DEWINE, GOVERNOR MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

October 19, 2020

Stacey Mueller
AECOM
525 Vine Street
Cincinnati, Ohio 45202

Re: 20-806; Fiddlestix Switch-Illesboro South Central 138 kV Transmission Line Project

Project: The proposed project involves installing approximately 1.5 miles of greenfield 138 kV transmission line to tie the new Illesboro delivery point to the Lemaster-Ross 138 kV circuit and the installation of a new three-way phase over phase 138 kV switch to serve the new Illesboro delivery point.

Location: The proposed project is located in Swan Township, Vinton County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of little spectaclecase (*Villosa lienosa*), a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

ATTACHMENT B:

USFWS TECHNICAL ASSISTANCE (03E15000-2021-TA-0064); AEP FIDDLESTIX-ILESBORO SOUTH 138 KV TRANSMISSION LINE PROJECT

DATED OCTOBER 7, 2020

Mueller, Stacey

From: Ohio, FW3 <ohio@fws.gov>
Sent: Wednesday, October 7, 2020 2:56 PM
To: Mueller, Stacey
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate; todd.hess@usda.gov; katrina.schultes@usda.gov
Subject: [EXTERNAL] AEP Fiddlestix Switch-Illesboro South Central 138 kV Transmission Line Project in Vinton County, Ohio

Follow Up Flag: Follow up
Flag Status: Flagged

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS #03E15000-2021-TA-0064

Dear Ms. Mueller,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. It appears that this project may cross the Wayne National Forest and a federal authorization from the Forest Service may be required. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA) on both private and federal property.

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year (see exception below). Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer surveys may only be conducted between June 1 and August 15. However, for all projects that cross the Wayne National Forest and require Forest Service authorization, seasonal tree clearing is still required (regardless of presence/absence survey results) to be in compliance with the Land and Resource Management Plan (i.e., the Forest Plan). If meeting timing restrictions is a concern, contact the Wayne National Forest as early as possible for more information on the process and potential alternatives.

The proposed project lies within the range of the endangered **running buffalo clover** (Trifolium stoloniferum). Known locations of this plant occur within the same township as the proposed project. This plant can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. If suitable habitat is present, we recommend that surveys for this species be conducted by a trained botanist in May or June when the plant is in flower. The survey must be coordinated with the Ohio Field Office in advance.

Surveys for Federally Listed Plant Species: Federally listed plants are always protected on federal property under the ESA. Please be aware that for projects on the Wayne National Forest that require federal authorization, you may be requested to provide additional information on the potential of the project area to provide habitat for running buffalo clover (Trifolium stoloniferum), small whorled pogonia (Isotria medeoloides), northern monkshood (Aconitum noveboracense), and Virginia spiraea (Spiraea virginiana). In addition, season-specific surveys for these species may also be requested by the Forest Service to ensure compliance with the ESA and the Forest Plan.

Section 7 Coordination: If this project crosses the Wayne National Forest and requires federal authorization, or if there is another federal nexus for the project (e.g., federal funding provided, federal permits required), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is

completed. We recommend the federal action agency submit a determination of effects to this office, relative to federally listed bats and plants, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources and the Wayne National Forest due to the potential for the proposed project to affect state listed species and/or state and federal lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us. For projects on Wayne National Forest we recommend that you contact Todd Hess at (740) 753-0980 or at todd.hess@usda.gov.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice M. Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Todd Hess, WNF
Katrina Schultes, WNF

ATTACHMENT C:

REPRESENTATIVE PHOTOGRAPHS OF HABITAT WITHIN PROJECT SURVEY AREA

AECOM

PHOTOGRAPHIC RECORD
HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo 1 **Date:** November 21, 2018 **Description:** Mixed mesophytic forest habitat within proposed ROW Facing West	

Photo 2 **Date:** October 1, 2020 **Description:** Scrub-shrub habitat within proposed ROW Facing West	

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE PROJECT

ADDENDUM 1 – ACCESS ROAD

VINTON COUNTY, OHIO

ADDENDUM WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:

American Electric Power Ohio Transmission Company
8600 Smiths Mill Road
New Albany, Ohio 43054

Prepared by:

AECOM

525 Vine Street, Suite 1800
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Project #: 60624128

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1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to install approximately 1.8 miles of greenfield 138 kV transmission line in Vinton County, Ohio (Project). The greenfield route is to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit. Approximately 0.01 mile of 138 kV line on the existing Poston-Ross 138 kV Transmission Line is also included in the Project. The proposed Project is illustrated on Figure 1. Since the completion of the original wetland delineation and stream assessment report (Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project – Wetland Delineation and Stream Assessment Report – February 2021 (September 2021 – Report)), AEP Ohio Transco required the survey of additional work areas and one new access road to the Ilesboro south central transmission line to facilitate the rebuild in Vinton County, Ohio (Figure 1). AEP Ohio Transco retained AECOM Technical Services, Inc. (AECOM) to revise the original February 2021 report based on the EPA's 2020 Clean Water Act Section 401 Certification Rule vacatur on October 21, 2021 and to survey the additional 3.75 acres comprising the additional work area and a 50-ft. wide buffer along the associated access road (the Addendum Project survey corridor, see Figure 2).

The identified features that were originally provided in the February 2021 – Report are not referenced in this report unless they fall within the current (March 2022) Project survey corridor. Previously identified features, data forms, photographs, and supporting information of the previous survey of the Project are contained within the Revised February 2021 – Report.

This addendum wetland delineation and stream assessment report includes the results (data forms, photographs, and updated figures) associated with wetlands and/or streams identified within the current Project survey corridor (Addendum 1 Project survey corridor).

2.0 METHODOLOGY

A comprehensive methodology of the field surveys and data reviews completed for this report are included in the February 2021 – Report. A brief summary of the delineation and agency coordination methodology has been provided below.

Delineations were conducted in accordance with the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (1987 Manual) (Environmental Laboratory, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (EMP Regional Supplement) (USACE, 2012). In addition, delineated wetlands were classified using the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM; Mack, 2001). Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index (Rankin, 2006) and OEPA's Field Methods for Evaluating Primary Headwater Streams in Ohio (OEPA, 2018).

AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section as well as the United States Fish and Wildlife Service (USFWS) in August 2020 soliciting comments on the proposed Project. Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

3.0 RESULTS

AECOM ecologists walked the Addendum Project survey corridor on February 2, 2022 to conduct the wetland delineation, stream assessment and habitat survey. No wetlands, streams, or ponds were identified within the Addendum Project survey corridor. No previously identified features from the February 2021 – Report were confirmed to extend into the Addendum Project survey corridor. During the field survey of the Addendum Project survey corridor, milkweed plants (Asclepias) were identified amidst old field habitat within the Addendum Project survey corridor. These milkweeds may provide potentially suitable habitat for monarch butterflies. Photographs of vegetative communities within the Addendum Project survey corridor are included in Appendix A and corresponding photograph locations are shown on Figure 3.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils were observed and documented as part of the delineation methodology. One soil series with two soil map unit types were observed in the Addendum Project survey corridor. These soil map unit types were both previously identified in the February 2022 – Report and are Bethesda silt loam with 0 to 8 percent slopes and 8 to 25 percent slopes. No new soil map units were identified within the Addendum Project survey corridor. A list of the previously identified soil map units is provided in the February 2022 – Report. Soil map units are illustrated in Figure 2.

3.1.2 National Wetland Inventory Map Review

According to the NWI data covering the Project area, the Addendum Project survey corridor does not contain any mapped NWI wetlands. The locations of mapped NWI wetlands present in the vicinity of the Addendum Project survey corridor are illustrated on Figure 2.

3.1.3 Delineated Wetlands

During the February 2022 field survey, AECOM did not identify any wetlands within the Addendum Project survey corridor. Additional information on previously identified wetlands, including data forms and photographs, is provided in the February 2021 – Report.

3.2 STREAM CROSSINGS

During the February 2022 field survey, AECOM did not identify any streams in the Addendum Project survey corridor. Data forms, and additional information for previously identified streams within the original Project survey corridor are in the February 2021 – Report.

3.3 OEPA STREAM ELIGIBILITY

The Addendum Project survey corridor is located in the West Branch Racoon Creek and Brushy Fork watersheds (HUC 12: 050901010202 & 050901010203) which are considered "Eligible" by OEPA (OEPA, 2017). This means that this project may be eligible for general 401 water quality certification or 404 nationwide permits if all conditions and limitations are met.

3.4 PONDS

No ponds were identified within the Addendum Project survey corridor.

3.5 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY CORRIDOR

AECOM ecologists conducted a general habitat survey in conjunction with the stream and wetland field survey in February 2022. Habitat types within the Addendum Project survey corridor included old field and urban area. Habitat descriptions, applicable to the entire Project, and details on the expected impacts of construction are provided below in Table 1. Vegetated land cover is noted on aerial photography provided on Figure 5.

TABLE 1 - VEGETATIVE COMMUNITIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE REBUILD ADDENDUM PROJECT SURVEY CORRIDOR

Vegetative Community	Description	Approximate Acreage Within the Project Survey Corridor	Approximate Percentage Within the Project Survey Corridor
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs. Dominant species include Canada goldenrod (*Solidago canadensis*), Japanese bristlegrass (*Setaria faberi*), and Johnson grass (*Sorghum halepense*).	3.75	100%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings, and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	0.0	0%
Totals:		**3.75**	**100%**

3.6 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a survey for potential rare, threatened, and endangered species habitat within the Project survey corridor. A summary of the agency coordination responses is provided below. Correspondence letters from the USFWS and ODNR are included with the February 2021 - Report. Table 2 provides a list of species of concern previously identified by ODNR and USFWS regarding the Revised February 2021 – Report, that may be present in the Addendum 1 Project survey corridor.

TABLE 2
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Mammals						
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	No -Within the Addendum Project survey corridor, no potentially suitable summer roosting or winter hibernating habitat was identified.	ODNR-DOW commented that the Project is located within the Indiana bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS commented that the Indiana bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31 to avoid impacts to Indiana bats.	Potential suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

TABLE 2
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by this species. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical because insect prey density is greater over or near open water. This species has also been found, albeit rarely, roosting in structures like barns and sheds.	No -Within the Addendum Project survey corridor, no potentially suitable summer roosting or winter hibernating habitat was identified.	ODNR-DOW commented that the Project is located within the northern long-eared bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS commented that the Northern long-eared bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

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ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Little brown bat (*Myotis lucifugus*)	Endangered	Threatened	Little brown bats are habitat generalists, using most cover types available to them in a variety of ecosystems. Much of their foraging activity is associated with aquatic habitats, so lakes and streams play a significant factor in habitat use.	No -Within the Addendum Project survey corridor, no potentially suitable summer roosting or winter hibernating habitat was identified.	ODNR-DOW commented that the Project is located within the little brown bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS did not comment on this species.	No potentially suitable habitat was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.
Tricolored bat (*Perimyotis subflavus*)	Endangered	None	Tricolored bats are associated with forested landscapes, often in open woods. They can also be found over water and adjacent water edges. Tricolored bats commonly among the leaves or needles of live or dead trees but will also use buildings. The bats hibernate in caves, mines, and rock outcroppings.	No -Within the Addendum Project survey corridor, no potentially suitable summer roosting or winter hibernating habitat was identified.	ODNR-DOW commented that the Project is located within the Indiana bat's range. If trees must be cut, ODNR-DOW recommends implementing seasonally tree cutting (October 1 through March 31), and conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches. If implementation of seasonal cutting is not feasible, ODNR-DOW recommends conducting a mist net survey or acoustic survey from June 1 to August 15, prior to any cutting. USFWS did not comment on this species.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.

TABLE 2
ODNR AND USFWS LISTED SPECIES WITHIN THE FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV TRANSMISSION LINE PROJECT

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Reptiles						
Timber rattlesnake (*Crotalus horridus*)	Endangered	Species of Concern	In addition to wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW indicated that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	ODNR DOW determined that this project is not likely to impact this species.
Fish						
Northern brook lamprey (*Ichthyomyzon fassor*)	Endangered	None	The northern brook lamprey inhabits clean headwater areas of creeks and small rivers with coarse gravel to rock bottoms located in once glaciated terrain.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Ohio lamprey (*Ichthyomyzon bdellium)*	Endangered	None	The Ohio lamprey inhabits warmwater habitats in the Ohio River basin, including the Allegheny, Wabash, and Upper Tennessee drainages. Depending on the life cycle period, this species either inhabits slow areas with soft substrates and high detrital content, medium to large river systems, or runs and riffles of clean gravel/cobble in smaller streams and rivers.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Spotted darter (*Etheostoma maculatum*)	Endangered	None	This species requires large unpolluted streams, spending most of its time in deep riffles, or pools just downstream, where a gravel-rubble bottom predominates, and bottom current velocity is low.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project

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Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
Tippecanoe darter (*Etheostoma tippecanoe*)	Threatened	None	This little darter prefers riffle areas four to 20 inches deep, in clean rivers and large creeks with a bottom of pea-sized, clean gravel and a high bottom current velocity	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Bivalves						
Little spectaclecase (*Villosa lienosa)*	Endangered	None	This species lives in sandy substrates in slight to moderate current. The mussel prefers mud and typically inhabits small creeks to medium-sized rivers with perennial flow regimes, usually along the banks in slower currents.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW comments that due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project
Birds						
Northern harrier (*Circus hudsonis*)	Endangered	None	This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands.	Yes- undulating grasslands were identified within the Project survey corridor, which present potentially suitable habitat.	ODNR-DOW recommends that construction should be avoided within the grassland habitat during the species' nesting period of May 15 to August 1. If this type of habitat will not be impacted, the Project is not likely to impact this species.	Potentially suitable habitat (grasslands) was observed within the Project survey corridor. It is recommended that construction within this habitat takes place outside of the bird's nesting period (May 15 to August 1).
Amphibians						
Eastern hellbender (*Cryptobranchus alleganiensis)*	Endangered	Species of Concern	The eastern hellbender's habitat consists of shallow, fast-flowing rocky streams. They are generally found in areas with large, intermittent, irregularly shaped rocks, within swift water. They tend to stay away from slow-moving water and muddy banks with slab rock bottoms.	No- Within the Project survey corridor, no potentially suitable habitat was	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work

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Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Typical Habitat Description	Habitat Observed	Agency Comments	Potential Impacts and Avoidance Dates
				observed for this species.		is proposed for the Project.
Midland mud salamander (*Pseudotriton montanus diastictus*)	Threatened	None	This species inhabits muddy and silty areas along swamps, seeps, bogs, springs, floodplain forests, and headwater streams. Sightings of this species are rare, as the salamanders live underground in burrows.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	ODNR determined that this project is not likely to impact this species.
Eastern spadefoot toad (*Scaphiopus holbrooki*)	Endangered	None	This species if found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions.	No- Within the Project survey corridor, no potentially suitable habitat was observed for this species.	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.	No potentially suitable habitat was observed within the Project survey corridor. No in-water work is proposed for the Project.

ODNR Coordination – Coordination with the ODNR was initiated during the planning stages of the Project to obtain records of protected species located in the vicinity of the Project. On October 19, 2020, the ODNR Office of Real Estate Environmental Review Section replied to an emailed request for records of protected species within an extended area around the Project site. The Ohio Natural Heritage Database (ONHD) did not return records of state endangered or threatened plant or animal species within a one-mile radius of the Project area. Additionally, the ONHD did not return records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species.

The ODNR Division of Wildlife (DOW) recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The ODNR DOW also stated that due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact the little spectaclecase, the timber rattlesnake, the eastern hellbender, the midland mud salamander, or the eastern spadefoot toad. Impacts to these species are still not anticipated as a result of the Project as no additional water features or wooded areas were observed in the Addendum Project survey corridor.

ODNR-DOW recommends that a desktop habitat assessment, followed by a field assessment (if needed) be conducted to determine if there are potential hibernaculum(a) present within the Project Area. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer or winter tree cutting may be acceptable after consultation with DOW. In addition to conducting a general habitat survey in September and October 2020, AECOM performed a limited desktop habitat assessment to determine potential hibernaculum(a) within the Project area. Two underground mines were identified within 0.25-mile of the Project corridor; however, no significant tree clearing is anticipated within portions of ROW that are within 0.25-mile of those locations. The desktop habitat assessment can be found as Attachment G in the original report.

USFWS Coordination – Coordination with the USFWS was also initiated during the planning stages of the Project to obtain technical assistance in regard to federally listed species that may occur within the Project vicinity. The USFWS responded on October 7, 2020, indicating that the Project crosses the Wayne National Forest and a federal authorization from the Forest Service may be required. During the siting process of the Project, it was determined that a federal authorization from the Forest Service was not required for the Project.

4.0 SUMMARY

This addendum includes wetland delineation and stream assessment results as well as habitat assessments of the newly proposed access road to the Ilesboro South Central Power transmission line (Addendum Project survey corridor) in Vinton, County Ohio. Identified wetlands and streams within the original wetland delineation and stream assessment report, Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project – *February 2021*, are included on the figures for reference. Data forms, photographs, and supporting information of the previously identified features are provided within the February 2021 – Report.

According to a response letter received from the USFWS on October 7, 2020, this Project is located within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. With regard to state threatened and endangered species that may occur within the Project vicinity, 14 species were listed by ODNR. These species included: Indiana bat, northern long-eared bat, little brown bat, tricolored bat, little spectaclecase, northern brook lamprey, Ohio lamprey, spotted darter, Tippecanoe darter, timber rattlesnake, eastern hellbender, midland mud salamander, eastern spadefoot toad, and the northern harrier.

Based on general observations during the ecology survey, no potentially suitable habitat was identified in the Addendum Project survey corridor for the Indiana bat, northern long-eared bat, little brown bat, tricolored bat, little spectactlecase, northern brook lamprey, Ohio lamprey, spotted darter, Tippecanoe darter, timber rattlesnake, eastern hellbender, midland mud salamander, or the eastern spadefoot salamander. The results of the ecological survey conducted by AECOM on February 2, 2022 and provided in this Project addendum are limited to the areas within the Addendum Project survey corridor provided in Figure 3: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Project survey corridor were not evaluated in the field and are not included in the reporting of this survey.

Habitat in the area was suitable for the northern harrier as it was primarily composed of undulating grasses in a pasture field. ODNR-DOW recommends that construction should be avoided within the grassland habitat during the species' nesting period of May 15 to August 1. This type of habitat is present within the Addendum Project survey corridor as the old field that dominates the majority of the study area is primarily composed of grasses. During field surveys for the Addendum study area, AECOM ecologists observed a distant raptor foraging over the grassland habitat west of OH-98 near the Project area. Physical characteristics (gray head and dorsal surface, white ventral surface and rump) and behavior (low, consistent flight pattern punctuated by apparent predatory dives) of the raptor were consistent with the northern harrier. Although positive identification could not be made from great distance, this observation supports the likelihood of northern harriers to be present within or adjacent to the Project area.

The information contained in this report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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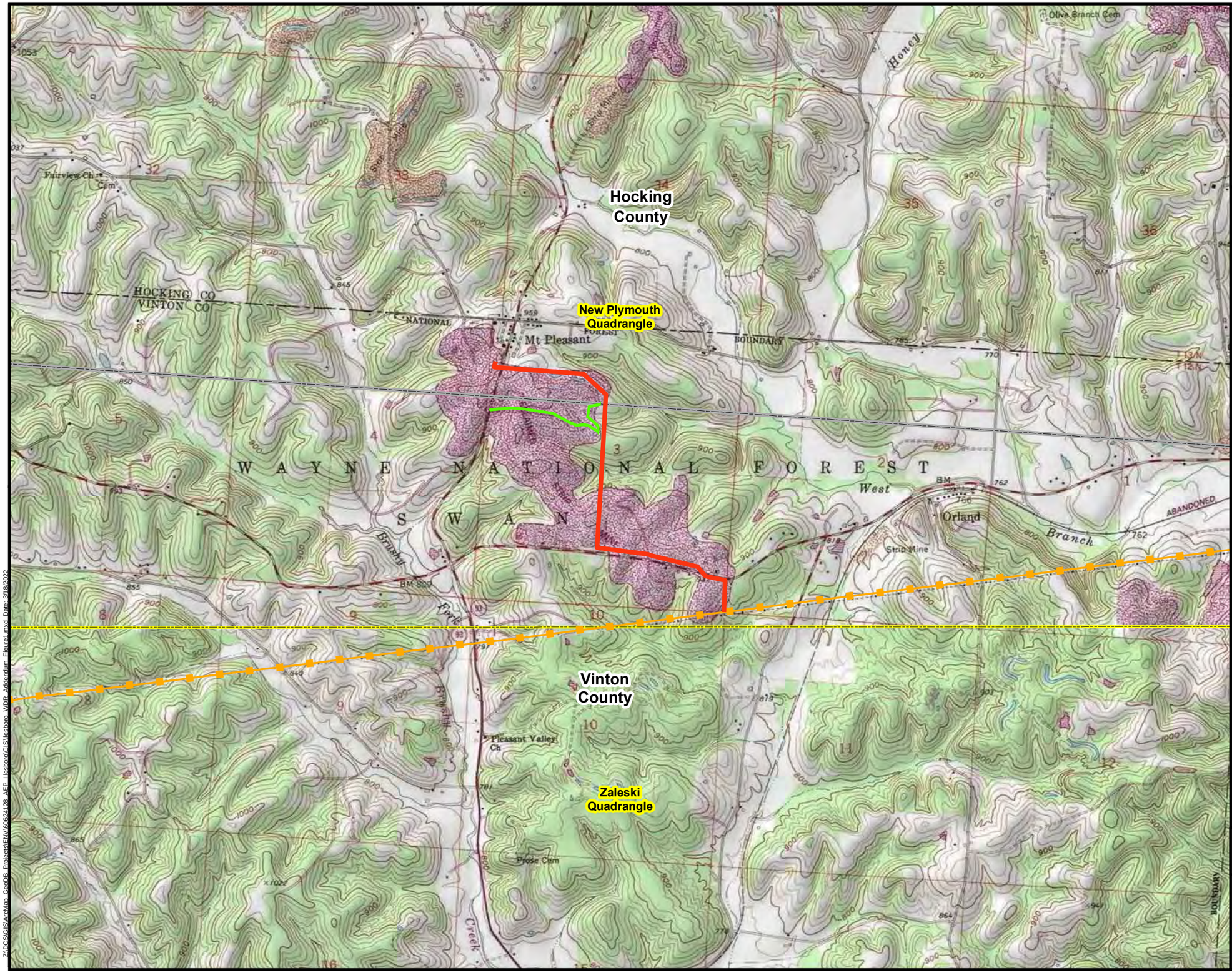
FIGURES



LEGEND:

- Proposed Ilesboro 138kV Transmission Line
- Existing Poston-Ross 138 kV Transmission Line
- Ilesboro Addendum 1 Project Study Corridor
- Ohio USGS 7.5" Topographical Quadrangle
- County Boundary

N

0 2,000 4,000

Feet

BASE MAP SOURCE:
Copyright:© 2013 National Geographic Society, i-cubed

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138kV Transmission Line

FIGURE 1
OVERVIEW MAP

JOB NO. 60624128

AECOM

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No Hydric Soils were found within the Project Area

WhL1D1
WbC
PUBGx
R4SBC
R4SBC
WhL1E1
Bhv1D
Bhs4F
Upland 05
Wetland 04
PEM
Category 2
050901010202
West Branch
Raccoon Creek
Bhv1B
050901010203
Brushy Fork
Bhv1D
Vinton
County
Bhv1D
R4SBC
WhL1E1
Bhv1D
R4SBC
WhL1E1

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Access Road
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- NWI Wetland (USFWS)
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2A
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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No Hydric Soils were found within the Project Area

WbC
ZnB
WbC
R4SBC
WhL1E1
Bhs4F
Upland 05
Wetland 04
PEM
Category 2
050901010203
Brushy Fork
Bhv1B
050901010202
West Branch
Raccoon Creek
WbC
Stream 04
Perennial
Class III
PFO1C
Wetland 03
PFO
Category 2
Vinton
County
050901010203
Brushy Fork
Bhv1D
R4SBC
WbC
Bhs4D
WhL1E1
PEM1/UBFh

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Access Road
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- NWI Wetland (USFWS)
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhs4D, Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed

Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

ZnB, Zanesville silt loam, 3 to 8 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 2B
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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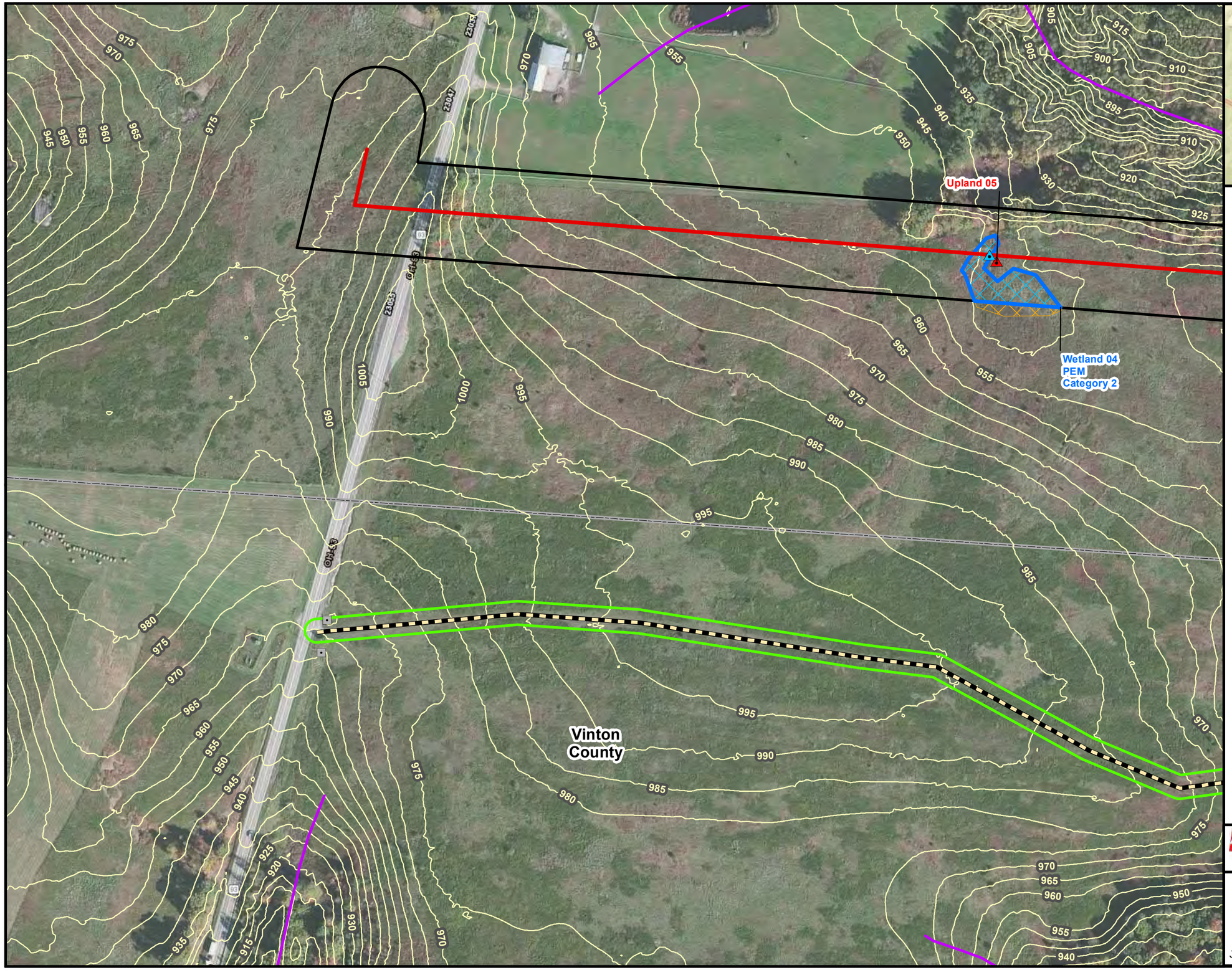

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Access Road
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3A
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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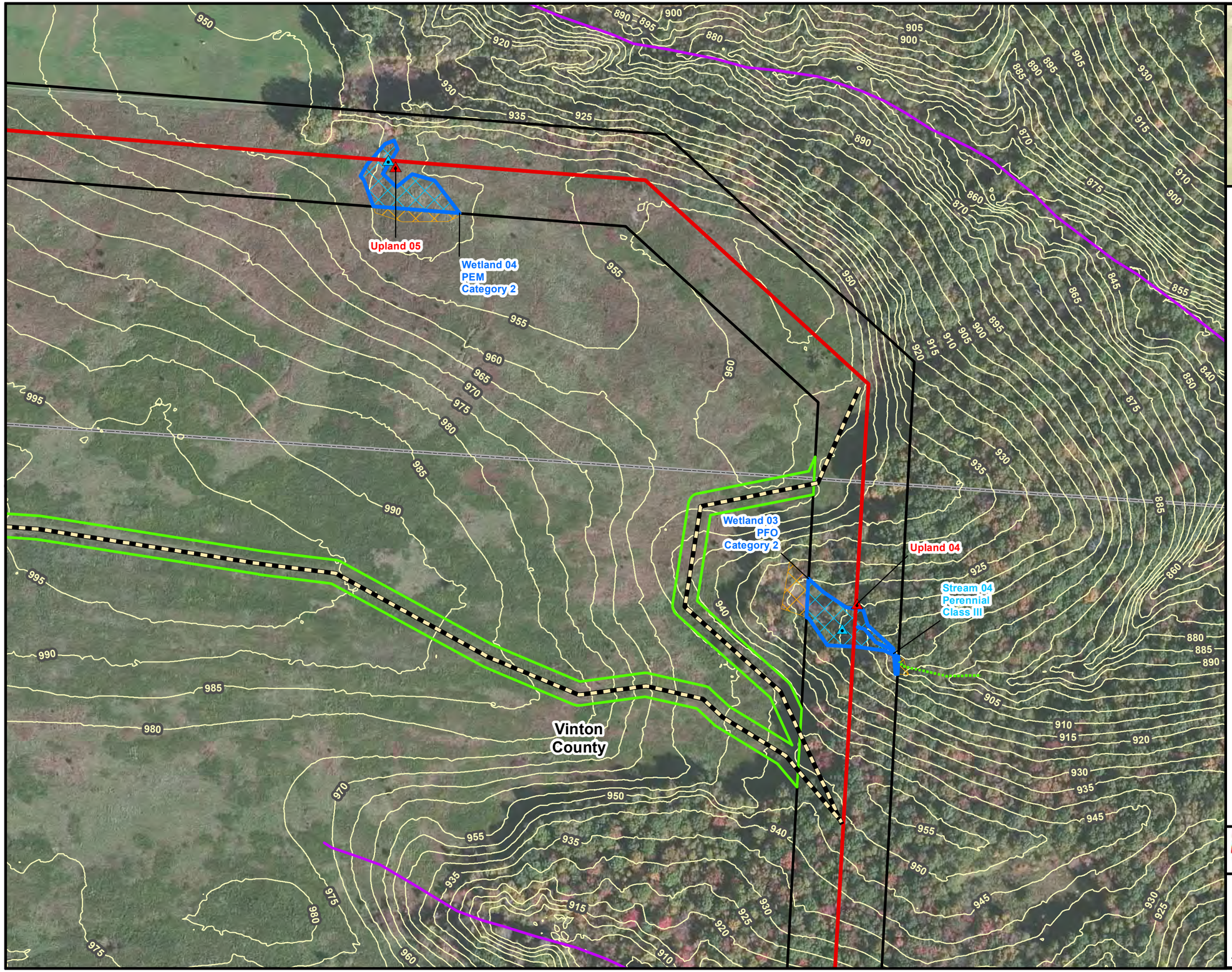

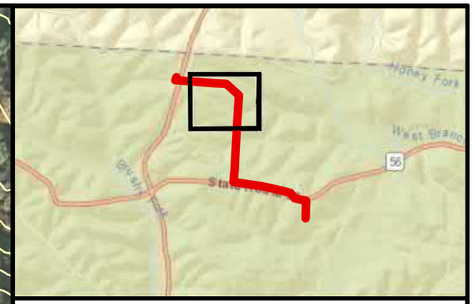

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138 kV Transmission Line
- Access Road
- Delineated Perennial Stream
- Approximate Stream
- NHD Stream (USGS)
- Delineated Wetland
- Approximate Wetland
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 3B
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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Stream 04
Perennial
Class III

Stream 03
Perennial
Class III

Stream 02
Perennial
Class III

Stream 01
Ephermal
Modified Class I

Ohio EPA 401
Eligible

Ohio EPA 401
Eligible

Vinton
County

Mt. Pleasant

NATIONAL FOREST BOUNDARY

WAYNE NATIONAL FOREST

West Branch Raccoon Creek

Honey Fork

Brushy Fork

Brushy Creek

Strip Mine

LEGEND:

- Culvert
- Proposed Ilesboro 138 kV Transmission Line
- Access Road
- Approximate Stream
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- NHD Stream (USGS)
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- County Boundary

OEPA Stream Eligibility:

- Eligible

N

0 1,000 2,000
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY

Fiddlestix SW-Ilesboro
South Central Power
138 kV Transmission Line

FIGURE 4
STREAM ELIGIBILITY MAP

JOB NO. 60624128

AECOM

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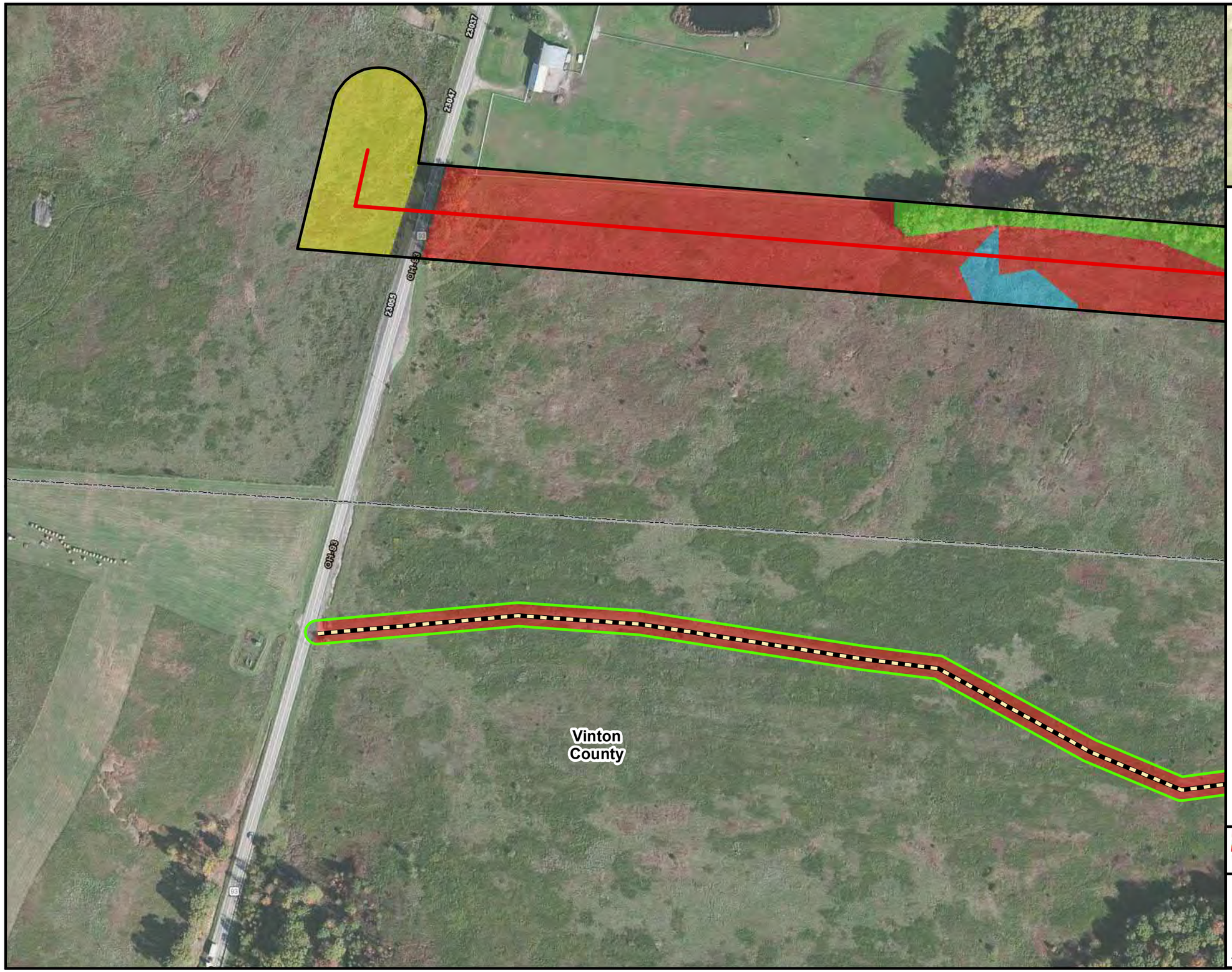

LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Access Road
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5A
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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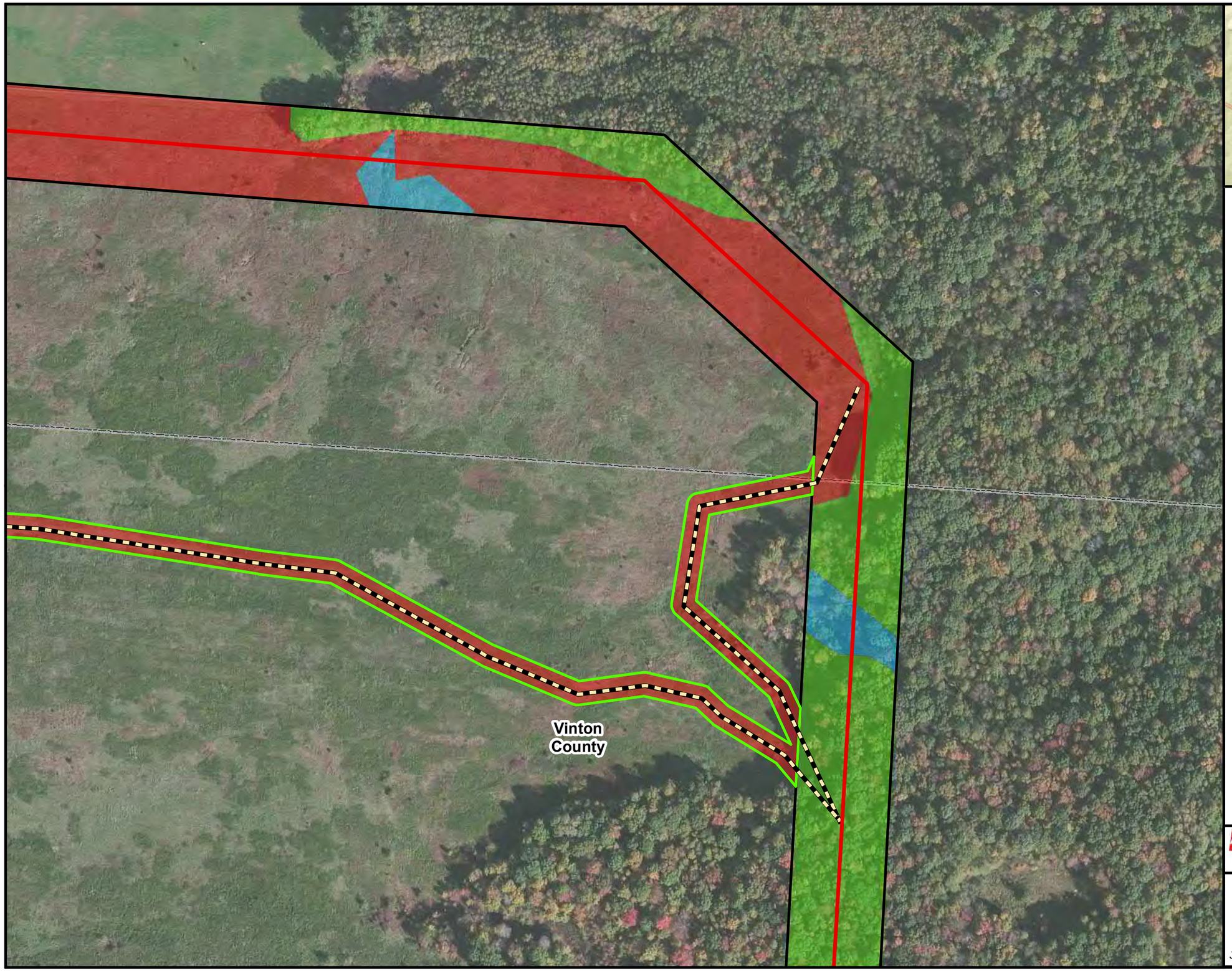

LEGEND:

- Proposed Illesboro 138 kV Transmission Line
- Access Road
- Addendum 1 Project Survey Corridor
- Project Survey Corridor
- County Boundary

Vegetation Community Type

- Mixed Mesophytic Forest
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 KV Transmission Line

FIGURE 5B
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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APPENDIX A

Habitat and Other Identified Features Photographs

PHOTOGRAPHIC RECORD
HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch – Ilesboro South Central Power 138kV Transmission Line Project	60624128

Photo 1	
Date: February 2, 2022	
Description: Old field habitat within access road Facing North	

Photo 2	
Date: February 2, 2022	
Description: Urban area of public road and gravel west of access road Facing West	

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138KV TRANSMISSION LINE PROJECT

ADDENDUM 2 – FINAL ALIGNMENT

VINTON COUNTY, OHIO

ADDENDUM WETLAND DELINEATION AND STREAM ASSESSMENT REPORT, ADDENDUM 2

Prepared for:

American Electric Power Ohio Transmission Company
8600 Smiths Mill Road
New Albany, Ohio 43054

Prepared by:

AECOM

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60624128

October 2022

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TABLES (in-text)

FIGURES

Number

APPENDICES

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to install approximately 1.5-miles of greenfield 138 kV transmission line in Vinton County, Ohio (Project). The greenfield route is to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit. Installation of a new three-way phase over phase 138 kV switch to serve the new Ilesboro 138 kV delivery point connected to the Lemaster-Ross 138 kV circuit is proposed. Approximately 0.01-mile of 138 kV line on the existing Poston-Ross 138 kV Transmission Line is also included in the Project. The proposed Project is illustrated on Figure 1.

The initial wetland delineation and stream assessment report, completed in February 2021, was revised in March 2022, titled as: *Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project – Wetland Delineation and Stream Assessment Report – February 2021, Revised in March 2022* (AECOM, 2022a), herein referred to as the "Revised Report". The purpose of the report revision was to provide more accurate and updated stream and wetland classifications and categorizations since the vacatur of the EPA's 2020 Clean Water Act Section 401 Certification Rule (2020 Rule) on October 21, 2021.

In addition to the Revised Report, in March 2022, AEP Ohio Transco requested the survey of an additional 3.75-acres, comprising of additional work areas and a 50-foot-wide buffer along a potential access road to the proposed Ilesboro 138 kV Transmission Line, to facilitate the rebuild (Addendum 1 Project survey area, see Figure 1). The results of that effort are included within the *Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project Addendum 1- Access Road- Addendum Wetland Delineation and Stream Assessment Report –March 2022* (AECOM, 2022b), herein referred to as the "Addendum 1 Report".

In September 2022, AEP Ohio Transco retained AECOM Technical Services, Inc. (AECOM) to conduct a survey of approximately 66.16-acres associated with a selected final alignment, as chosen through the Route Analysis process, in Vinton County, Ohio (herein referred to as the "Addendum 2 Project survey area"). The addendum 2 Project survey area includes approximately 0.17-mile of access to the Lemaster-Ross 138kV circuit and approximately 1.16-mile-long section of existing transmission line known as the Lemaster-Ross 138 kV circuit (Figure 2). The results of the field efforts are included within this report.

The identified features that were originally provided in the March 2022 Revised and March 2022 Addendum 1 Reports are not referenced in this report. None of the originally identified features fall within the current Addendum 2 Project survey area. Previously identified features, data forms, photographs, and supporting information of the previous field efforts of the Project are contained within the March 2022 Revised Report and/or March 2022 Addendum 1 Report.

This addendum 2 ecological report includes the results (data forms, photographs, and updated figures) associated with wetlands and/or streams identified only within the Addendum 2 Project survey area (Figure 1).

2.0 METHODOLOGY

A comprehensive methodology of the field surveys and data reviews completed for this report are included in the March 2022 Revised Report. A brief summary of the delineation and agency coordination methodology has been provided below.

Delineations were conducted in accordance with the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (1987 Manual) (Environmental Laboratory, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (EMP Regional Supplement) (USACE, 2012). In addition, delineated wetlands were classified using the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM; Mack, 2001). Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index (Rankin, 2006) and OEPA's Field Methods for Evaluating Primary Headwater Streams in Ohio (OEPA, 2020).

AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section, as well as the United States Fish and Wildlife Service (USFWS) in August 2022 soliciting comments on the proposed Project. Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

3.0 RESULTS

AECOM ecologists surveyed the Addendum 2 Project survey area from September 1st - 2nd , 2022 to conduct a wetland delineation, stream assessment and habitat survey. During the field survey, ten (10) wetlands and ten (10) streams were identified within the Addendum 2 Project survey area. The delineated features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 PRELIMINARY SOILS EVALUATION

Soils in delineated wetlands were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Survey (USDA NRCS SSURGO, 2019), eight (8) soil map units are mapped within the Addendum 2 Project survey area (Figure 2). Of these soil map units, none are

characterized as hydric. Table 1 below provides a detailed overview of all soil series and soil map units within the Addendum 2 Project survey corridor. Soil map units located are shown on Figure 2.

TABLE 1: SOIL MAP UNITS AND DESCRIPTION WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Bethesda	Bhs4F	Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed	Ridges	No	0
	Bhv1B	Bethesda silt loam, 0 to 8 percent slopes, reclaimed	Ridges	No	0
Omulga	Omu1C1	Omulga silt loam, 6 to 12 percent slopes	Terraces	No	0
Sewell	SbE	Sewell channery fine sandy loam, 20 to 40 percent slopes	Hills	No	0
Wellston	WbC	Wellston silt loam, 8 to 15 percent slopes	Ridges	No	0
Wharton-Latham	WhL1D1	Wharton-Latham silt loams, 15 to 25 percent slopes	Hills	No	0
	WhL1E1	Wharton-Latham silt loams, 25 to 40 percent slopes	Hills	No	0
Wyatt	Wya1b1	Wyatt silt loam, 2 to 6 percent slopes	Terraces	No	0

USDA, NRCS. Soil Survey Geographic (SSURGO) Database. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 21, 2022.

3.1.2 NATIONAL WETLAND INVENTORY MAP REVIEW

National Wetland Inventory wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. In addition, small wetlands are typically not identified due to the scale of aerial photography. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the National Wetland Inventory (NWI) data, the Addendum 2 Project survey area contains four (4) mapped NWI wetlands (USFWS, 2022). These NWI wetlands are described below in Table 2 and the locations of mapped NWI wetlands present within the Addendum 2 Project survey area and surrounding area are illustrated on Figure 2.

TABLE 2: NWI DISPOSITION SUMMARY TABLE WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

NWI Code	Number of NWI Feature present	NWI Description	Figure Reference	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
R4SBC	1	Riverine, Intermittent, Stream Bed, Seasonally Flooded	2A, 2C	Brushy Creek (S-WRL-003 and S-WRL-008)	Stream extends outside Addendum 2 Project survey area
PEM1C	1	Palustrine, Emergent, Persistent, Seasonally Flooded	2B	W-WRL-007 (PUB/PSS Complex)	Fully delineated within the Addendum 2 Project survey area
PUBGx	2	Palustrine, Unconsolidated bottom, Intermittently exposed, Excavated	2D	W-WRL-009 and W-WRL-010	Wetlands both extend outside the Addendum 2 Project survey area

3.1.3 DELINEATED WETLANDS

During the September 2022 field surveys, AECOM identified ten (10) wetlands within the Addendum Project 2 survey area. Three (3) of the delineated wetlands (W-WRL-001, W-WRL-002, and W-WRL-003) were provisionally determined to be isolated. A table summarizing identified wetlands, wetland data forms (USACE and OEPA) and photographs are provided in Appendix A and B. Additional information on previously identified wetlands, including data forms and photographs, is provided within the March 2022 Revised Report and March 2022 Addendum 1 Report.

3.2 STREAM DELINEATION

During the September 2022 field survey, AECOM identified ten (10) streams in the Addendum 2 Project survey area. A table summarizing identified streams, EPA stream data forms and photographs are provided in Appendix C and D. Data forms and additional information for previously identified streams is provided within the March 2022 Revised Report and March 2022 Addendum 1 Report.

3.3 OEPA STREAM ELIGIBILITY

The Addendum 2 Project survey area is located in the West Branch Racoon Creek and Brushy Fork watersheds (HUC 12: 050901010202 & 050901010203; Figure 4) which are considered “Eligible” by OEPA (OEPA, 2017b). Therefore, this Project may be eligible for General 401 Water Quality Certification of the 404 Nationwide Permits if all conditions and limitations are met.

3.4 PONDS

No ponds were delineated within the Addendum 2 Project survey area.

3.5 FEMA 100-YEAR FLOODPLAINS

No regulated FEMA 100-year floodplains and/or floodways are located within the Addendum 2 Project survey area.

3.6 UPLAND DRAINAGE FEATURES WITHIN THE PROJECT SURVEY AREA

Fifteen (15) upland drainage features (UDF) were identified within the Addendum 2 Project survey area. Based on site investigation, the UDFs lacked characteristics of jurisdictional WOTUS, as defined by USACE (USACE, 2005). Photographs of the upland drainage features are provided in Appendix D.

3.7 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

In conjunction with the stream and wetland field surveys in September 2022, AECOM ecologists conducted a general habitat survey. The Addendum 2 Project survey area was identified as predominately mixed mesophytic forest and scrub-shrub habitat. Vegetative community descriptions and approximate acreages within the Addendum 2 Project survey area are provided below in Table 3 and illustrated on Figure 5. Representative photographs of the vegetative communities are provided in Appendix E.

TABLE 3: VEGETATIVE COMMUNITIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage Within the Project Survey Area
Forest	Mixed mesophytic forests are present along the Project survey area and within the proposed ROW. Woody species dominating these areas ranged between 3-8" DBH and included swamp white oak (*Quercus bicolor*), red maple (*Acer rubrum*), tuliptree (*Liriodendron tulipifera*) and American beech (*Fagus grandifolia*). The dominant shrub-layer species included multiflora rose (*Rosa multiflora*) and northern spicebush (*Lindera benzoin*).	14.0	36
Scrub-Shrub	Scrub-shrub habitats represent the successional stage between old-field and second growth forest, and often emerge in recently harvested forests responding to the lightness of the remaining canopy. Dominant species consist of herbaceous communities similar to that of old field habitat with a few woody species, to a community dominated by forest herbs and woody species.	11.0	28
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the Addendum 2 Project survey area in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old field areas within the Addendum 2 Project survey area and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs. Dominant species include Canada goldenrod (*Solidago canadensis*), timothy (*Phleum pratense*), orchardgrass (*Dactylis glomerata*), and giant ironweed (*Vernonia gigantea*).	8.8	22

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage Within the Project Survey Area
Stream/Wetland	Streams and wetlands were observed both within and beyond the Addendum 2 Project survey area.	2.4	6
Grassland	A grassland field was observed in the northern portion of the Addendum 2 Project survey area. This area is within the proposed ROW and consists of seldomly disturbed upland grasses and low-lying forbs such as little bluestem (*Schizachyrium scoparium*), broomsedge (*Andropogon virginicus*), yellow foxtail (*Setaria pumila*), red clover (*Trifolium pratense*), wild carrot (*Daucus carota*), and goldenrod (*Solidago altissima*).	1.8	4.5
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings, and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	0.8	2
Hay Field/Pasture	Hay field was observed in very eastern portion of the Addendum 2 Project survey area. This area is within the existing ROW and consists of seasonally mowed areas of grass and forbs.	0.4	1
Residential	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project survey area and adjacent areas are frequently mowed grasses and forbs.	0.2	0.5
	Totals:	**39.3**	**100%**

3.8 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a survey for potential rare, threatened, and endangered species habitat within the Addendum 2 Project survey area. A summary of the agency coordination responses is provided below. Correspondence letters from the USFWS and ODNR are included as Appendix F.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Mammals							
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	Yes- Within the Addendum 2 Project survey area, wooded areas were identified, which present potentially suitable summer roosting habitat. Two (2) abandoned underground mine openings and several historic and inactive surface mines, which could potentially serve as winter hibernacula, were identified within 0.25 mile of the Addendum 2 Project Survey Area.	<u>Summer Tree Clearing</u> April 1 – September 30	ODNR-DOW stated that the Project is located within the Indiana bat's range. Therefore, ODNR-DOW recommends that if tree clearing is unavoidable, removal of trees only occurs from October 1 through March 31 and conserves trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If adherence to the seasonal tree clearing window is not feasible, ODNR recommends a mist net survey or acoustic survey be conducted from June 1 to August 15, prior to any cutting. Limited summer tree cutting may be acceptable after consultation with DOW. If a desktop habitat assessment identifies a potential hibernaculum present within 0.25-mile of the Project area, further coordination with ODNR-DOW may be required. USFWS commented that the Indiana bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31 to avoid impacts to Indiana bats. If seasonal tree clearing is not possible, then a summer presence/absence survey, conducted only between June 1 and August 15, may be conducted by an approved surveyor with a valid federal permit. Summer presence/absence surveys must be coordinated with the Ohio USFWS field office.	Potentially suitable summer habitat (Mixed Mesophytic Forest) and potential winter hibernacula were identified within 0.25-mile of the Addendum 2 Project Survey Area. If a potential or known hibernaculum is identified, ONDR-DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer/winter tree cutting may be acceptable after coordination with ODNR-DOW.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by this species. These tree species and many others may be used when dead if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical because insect prey density is greater over or near open water. This species has also been found, albeit rarely, roosting in structures like barns and sheds.	Yes- Within the Addendum 2 Project survey area, wooded areas were identified, which present potentially suitable summer roosting habitat. Two (2) abandoned underground mine openings and several historic and inactive surface mines, which could potentially serve as winter hibernacula, were identified within 0.25 mile of the Addendum 2 Project Survey Area.	<u>Summer Tree Clearing</u> April 1 – September 30	ODNR-DOW stated that the Project is located within the Northern long-eared bat's range. Therefore, ODNR-DOW recommends that if tree clearing is unavoidable, removal of trees only occurs from October 1 through March 31 and conserves trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If adherence to the seasonal tree clearing window is not feasible, ODNR recommends a mist net survey or acoustic survey be conducted from June 1 to August 15, prior to any cutting. Limited summer tree cutting may be acceptable after consultation with DOW. If a desktop habitat assessment identifies a potential hibernaculum present within 0.25-mile of the Project area, further coordination with ODNR-DOW may be required. USFWS commented that the Northern long-eared bat occurs throughout the State of Ohio and removal of trees ≥3 inches dbh is recommended to be avoided wherever possible. USFWS commented that if no caves or abandoned mines are present and tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31.	Potentially suitable summer habitat (Mixed Mesophytic Forest) and potential winter hibernacula were identified within 0.25-mile of the Addendum 2 Project Survey Area. If a potential or known hibernaculum is identified, ONDR-DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer/winter tree cutting may be acceptable after coordination with ODNR-DOW.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Little brown bat (*Myotis lucifugus*)	Endangered	Threatened	Little brown bats are habitat generalists, using most cover types available to them in a variety of ecosystems. Much of their foraging activity is associated with aquatic habitats, so lakes and streams play a significant factor in habitat use.	Yes- Within the Addendum 2 Project survey area, wooded areas were identified, which present potentially suitable summer roosting habitat. Two (2) abandoned underground mine openings and several historic and inactive surface mines, which could potentially serve as winter hibernacula, were identified within 0.25 mile of the Addendum 2 Project Survey Area.	<u>Summer Tree Clearing</u> April 1 – September 30	ODNR-DOW stated that the Project is located within the Little brown bat's range. Therefore, ODNR-DOW recommends that if tree clearing is unavoidable, removal of trees only occurs from October 1 through March 31 and conserves trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If adherence to the seasonal tree clearing window is not feasible, ODNR recommends a mist net survey or acoustic survey be conducted from June 1 to August 15, prior to any cutting. Limited summer tree cutting may be acceptable after consultation with DOW. If a desktop habitat assessment identifies a potential hibernaculum present within 0.25-mile of the Project area, further coordination with ODNR-DOW may be required. USFWS did not comment on this species.	Potentially suitable summer habitat (Mixed Mesophytic Forest) and potential winter hibernacula were identified within 0.25-mile of the Addendum 2 Project Survey Area. If a potential or known hibernaculum is identified, ONDR-DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer/winter tree cutting may be acceptable after coordination with ODNR-DOW.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Tricolored bat (*Perimyotis subflavus*)	Endangered	None	Tricolored bats are associated with forested landscapes, often in open woods. They can also be found over water and adjacent water edges. Tricolored bats commonly among the leaves or needles of live or dead trees but will also use buildings. The bats hibernate in caves, mines, and rock outcroppings.	Yes- Within the Addendum 2 Project survey area, wooded areas were identified, which present potentially suitable summer roosting habitat. Two (2) abandoned underground mine openings and several historic and inactive surface mines, which could potentially serve as winter hibernacula, were identified within 0.25 mile of the Addendum 2 Project Survey Area.	Summer Tree Clearing April 1 – September 30	ODNR-DOW stated that the Project is located within the Tricolored bat's range. Therefore, ODNR-DOW recommends that if tree clearing is unavoidable, removal of trees only occurs from October 1 through March 31 and conserves trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If adherence to the seasonal tree clearing window is not feasible, ODNR recommends a mist net survey or acoustic survey be conducted from June 1 to August 15, prior to any cutting. Limited summer tree cutting may be acceptable after consultation with DOW. If a desktop habitat assessment identifies a potential hibernaculum present within 0.25-mile of the Project area, further coordination with ODNR-DOW may be required. USFWS did not comment on this species.	Potentially suitable habitat (woodlands) was observed within the Project survey corridor. If tree removal is unavoidable, it is recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If a potential or known hibernaculum is identified, ONDR-DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer/winter tree cutting may be acceptable after coordination with ODNR-DOW.
Reptiles							
Timber rattlesnake (*Crotalus horridus*)	Endangered	Species of Concern	In addition to wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering.	No- Within the Addendum 2 Survey area, no potentially suitable habitat was observed for this species.	N/A	ODNR-DOW indicated that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species. USFWS did not comment on this species.	ODNR DOW determined that this project is not likely to impact this species.
Fish							
Northern brook lamprey (*Ichthyomyzon fassor*)	Endangered	None	The northern brook lamprey inhabits clean headwater areas of creeks and small rivers with coarse gravel to rock bottoms located in once glaciated terrain.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	No in-water work in perennial streams from March 15 through June 30	ODNR-DOW recommends no in-water work in perennial streams from March 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species. USFWS did not comment on this species.	No in-water work is proposed for the Project.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Ohio lamprey (*Ichthyomyzon bdellium)*	Endangered	None	The Ohio lamprey inhabits warmwater habitats in the Ohio River basin, including the Allegheny, Wabash, and Upper Tennessee drainages. Depending on the life cycle period, this species either inhabits slow areas with soft substrates and high detrital content, medium to large river systems, or runs and riffles of clean gravel/cobble in smaller streams and rivers.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	No in-water work in perennial streams from March 15 through June 30	ODNR-DOW recommends no in-water work in perennial streams from March 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species. USFWS did not comment on this species.	No in-water work is proposed for the Project.
Spotted darter (*Etheostoma maculatum*)	Endangered	None	This species requires large unpolluted streams, spending most of its time in deep riffles, or pools just downstream, where a gravel-rubble bottom predominates, and bottom current velocity is low.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	No in-water work in perennial streams from March 15 through June 30	ODNR-DOW recommends no in-water work in perennial streams from March 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact the species. USFWS did not comment on this species.	No in-water work is proposed for the Project.
Bivalves							
Little spectaclecase (*Villosa lienosa)*	Endangered	None	This species lives in sandy substrates in slight to moderate current. The mussel prefers mud and typically inhabits small creeks to medium-sized rivers with perennial flow regimes, usually along the banks in slower currents.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	N/A	ODNR-DOW comments that due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species. USFWS did not comment on this species.	No in-water work is proposed for the Project.
Amphibians							
Eastern hellbender (*Cryptobranchus alleganiensis)*	Endangered	Species of Concern	The eastern hellbender's habitat consists of shallow, fast-flowing rocky streams. They are generally found in areas with large, intermittent, irregularly shaped rocks, within swift water. They tend to stay away from slow-moving water and muddy banks with slab rock bottoms.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	N/A	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species. USFWS did not comment on this species.	No in-water work is proposed for the Project.

TABLE 4: ODNR AND USFWS LISTED SPECIES WITHIN THE ADDENDUM 2 PROJECT SURVEY AREA

Common Name (Scientific Name)	State Listed Status	Federal Listed Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts and Avoidance Dates
Midland mud salamander (*Pseudotriton montanus diastictus*)	Threatened	None	This species inhabits muddy and silty areas along swamps, seeps, bogs, springs, floodplain forests, and headwater streams. Sightings of this species are rare, as the salamanders live underground in burrows.	Yes. Bushy Creek (S-WRL-003 and S-WRL-008), a perennial stream, is present with the Addendum 2 Project Survey Area.	N/A	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species. USFWS did not comment on this species.	ODNR determined that this project is not likely to impact this species.
Eastern spadefoot toad (*Scaphiopus holbrooki*)	Endangered	None	This species if found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions.	No- Within the Addendum 2 Project survey area, no potentially suitable habitat was observed for this species.	N/A	ODNR-DOW commented that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species. USFWS did not comment on this species.	ODNR determined that this project is not likely to impact this species.

ODNR Coordination – Coordination with the ODNR was initiated during the planning stages of the Project to obtain records of protected species located in the vicinity of the Project. On September 30, 2022, the ODNR Office of Real Estate Environmental Review Section replied to an emailed request for records of protected species within an extended area around the Addendum 2 Project Survey Area. The Ohio Natural Heritage Database (ONHD) did not return records of state endangered or threatened plant or animal species within a one-mile radius of the Project area. Additionally, the ONHD did not return records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species.

The ODNR Division of Wildlife (DOW) recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The ODNR DOW also stated that due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact the little spectaclecase, the timber rattlesnake, the eastern hellbender, the midland mud salamander, or the eastern spadefoot toad. Impacts to these species are not anticipated as a result of the Project.

ODNR-DOW recommends that a desktop habitat assessment, followed by a field assessment (if needed) be conducted to determine if there are potential hibernaculum(a) present within the Project Area. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance; however, limited summer or winter tree cutting may be acceptable after consultation with DOW. In addition to conducting a general habitat survey in September 2022, AECOM performed a limited desktop habitat assessment to determine potential hibernaculum(a) within the Addendum 2 Project survey area. Two underground mines were identified within 0.25-mile of the Project corridor, therefore further coordination with ODNR-DOW may be required. The desktop habitat assessment can be found within Appendix F.

USFWS Coordination – Coordination with the USFWS was also initiated during the planning stages of the Project to obtain technical assistance in regard to federally listed species that may occur within the Project vicinity. The USFWS responded on September 21, 2022, noting that the due to the project, type, size, and location, we do not anticipate adverse effects to federally endangered, threatened, or proposed species or proposed or designated critical habitat.

4.0 SUMMARY

This addendum 2 includes wetland delineation and stream assessment results, as well as habitat assessments, of the proposed selected final alignment (Addendum 2 Project survey area) in Vinton, County Ohio. Identified wetlands and streams within the original wetland delineation and stream assessment report, *Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Rebuild Project – February 2021,*

Revised March 2022 (AECOM, 2022a) and the *Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project Addendum 1- Access Road- Addendum Wetland Delineation and Stream Assessment Report –March 2022* (AECOM, 2022b) are included not included within this report. Data forms, photographs, and supporting information of the previously identified features are provided within the previous reports.

The ecological survey of the Addendum 2 Project survey area identified a total of ten (10) wetlands and ten (10) streams. The wetlands within the Addendum 2 Project survey area includes:

- one (1) PEM wetland,
- one (1) PSS/PUB complex,
- four (4) PUB wetlands, and
- four (4) PFO wetlands.

All wetlands were identified as Category 2 wetlands. Seven of the ten wetlands (W-WRL-004, W-WRL-005, W-WRL-006, W-WRL-007, W-WRL-008, W-WRL-009, and W-WRL-010) have been provisionally classified as jurisdictional WOTUS; remaining three are provisionally isolated.

Streams within the Addendum 2 Project survey area include:

- two (2) ephemeral, both identified as Class I PHW streams,
- six (6) intermittent; five (5) classified as Class II PHW stream and one (1) (S-WRL-007) classified as a Class III PHW stream, and
- two (2) perennial streams (S-WRL-003 and S-WRL-008), both classified as Class III PHW streams.

AECOM has preliminary determined that the assessed streams within the Project survey area appear to be jurisdictional (i.e., WOTUS).

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey area provided in Figure 3. Areas that fall outside of the Project survey area were not evaluated in the field and are not included in the reporting of this survey.

According to a response letter received from the USFWS on October 7, 2020, this Project is located within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. With regard to state threatened and endangered species that may occur within the Project vicinity, 12 species were listed by ODNR. These species included: Indiana bat, northern long-eared bat, little brown bat, tricolored bat, little spectaclecase, northern brook lamprey, Ohio lamprey, spotted darter, timber rattlesnake, eastern hellbender, midland mud salamander, and eastern spadefoot toad.

Based on general observations during the ecology survey and initial coordination with USFWS and ODNR, no potential impacts to the little spectactlecase, northern brook lamprey, Ohio lamprey, spotted darter, Tippecanoe darter, timber rattlesnake, eastern hellbender, midland mud salamander, or the eastern spadefoot toad are anticipated. Further coordination with ODNR-DOW regarding the identified potential winter hibernaculum for Indiana bat, northern long-eared bat, little brown bat, and tricolored bat may be required.

The results of the ecological survey conducted by AECOM on September 1st-2nd, 2022 and provided in this Project addendum are limited to the areas within the Addendum 2 Project survey area provided in Figure 3: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Addendum 2 Project survey corridor were not evaluated in the field and are not included in the reporting of this survey.

The information contained in this report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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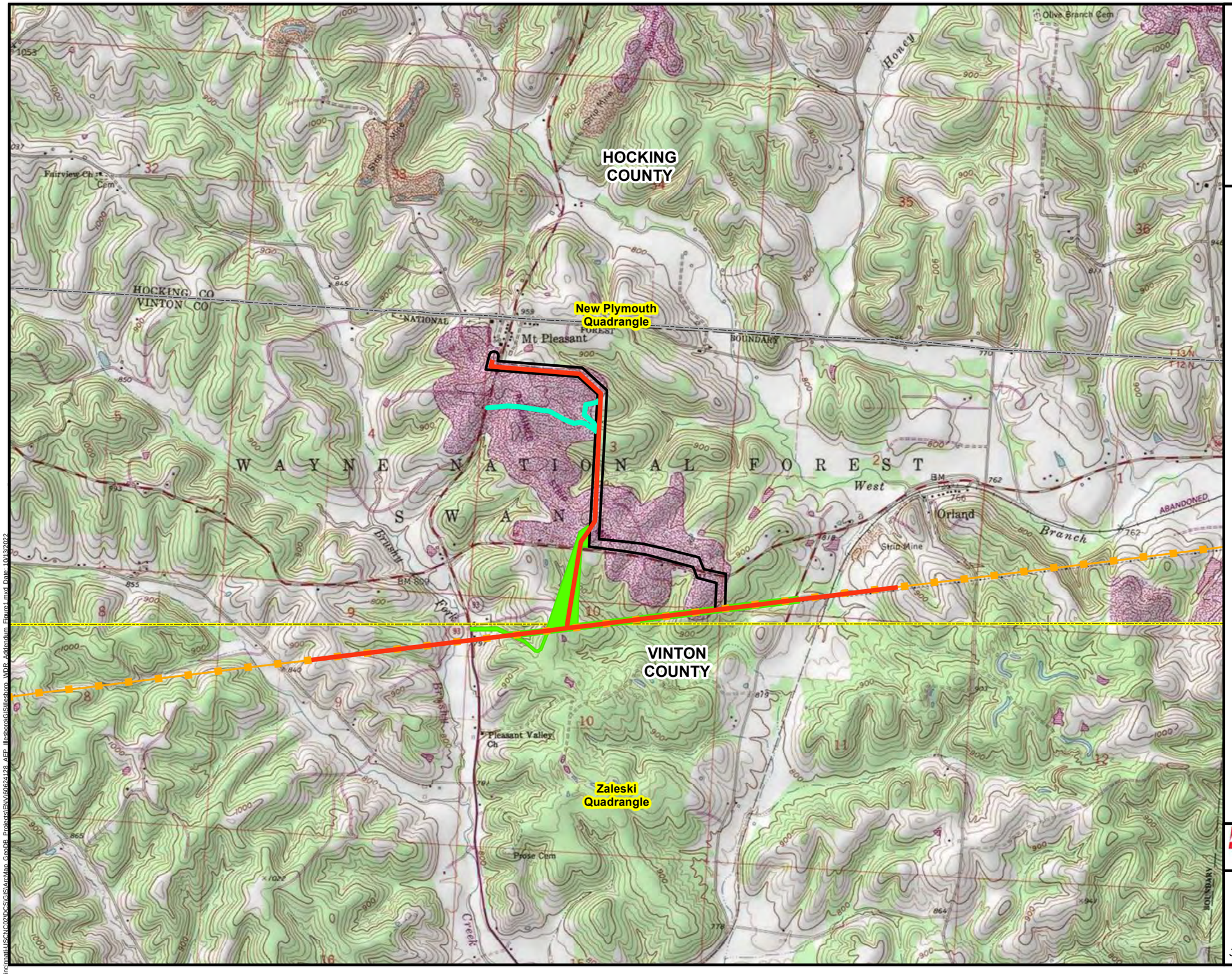
FIGURES



LEGEND:

- Proposed Ilesboro 138kV Transmission Line
- Existing Poston-Ross 138 kV Transmission Line
- Original Project Survey
- Addendum 1 Project Survey Area
- Addendum 2 Project Survey Area
- Ohio USGS 7.5" Topographical Quadrangle
- County Boundary

N

0 2,000 4,000

Feet

BASE MAP SOURCE:
Copyright:© 2013 National Geographic Society, i-cubed

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 1
OVERVIEW MAP

JOB NO. 60624128

AECOM

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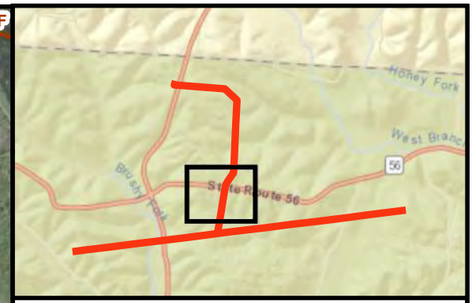
No mapped floodplains and no hydric soils were found within the Project Area

UBGx
Bhs4F
Bhv1B
050901010202 West Branch Raccoon Creek
PEM1Cx
Bhv1D
WbC
W-WRL-001 PUB Category 2
WhL1E1
OH-56
W-WRL-001-UPL
UDF-WRL-003
65286
W-WRL-002 PUB Category 2
W-WRL-002/003UPL
W-WRL-004 PFO Category 2
UDF-WRL-004
W-WRL-003 PFO Category 2
W-WRL-004-UPL
Vinton County
050901010203 Brushy Fork
R4SBC
SbE
UDF-WRL-005
S-WRL-001 Intermittent Class II PHW
S-WRL-002 Ephemeral Class I PHW
S-WRL-003 Perennial Class III PHW
S-WRL-004 Intermittent Class II PHW
WhL1D1
W-WRL-006 PFO Category 2
W-WRL-005-UPL
W-WRL-006-UPL
W-WRL-005 PFO Category 2
Brushy Creek
S-WRL-005 Intermittent Class II PHW



LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Original Access Road
- Addendum Access Road
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Ephemeral Stream
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PFO Wetland
- Addendum Delineated PUB Wetland
- NWI Wetland (USFWS)
- Original Project Survey Area
- Addendum 2 Project Survey Area
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed

SbE, Sewell channery fine sandy loam, 20 to 40 percent slopes

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 2A
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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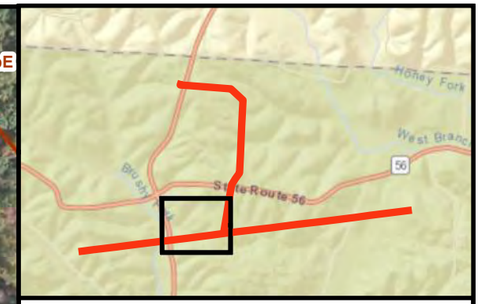
No mapped floodplains and no hydric soils were found within the Project Area

UDF-WRL-005
S-WRL-001 Intermittent Class II PHW
SbE
S-WRL-002 Ephemeral Class I PHW
S-WRL-003 Perennial Class III PHW
R4SBC
S-WRL-004 Intermittent Class II PHW
Brushy Creek
WbC
W-WRL-005-UPL
WhL1D1
W-WRL-005 PFO Category 2
S-WRL-005 Intermittent Class II PHW
WhL1E1
WhL1D1
Vinton County
050901010203 Brushy Fork
W-WRL-007 PSS Category 2
W-WRL-007-UPL
W-WRL-007 PUB Category 2
PEM1C
Wya1B1
S-WRL-007 Intermittent Class III PHW
UDF-WRL-007
S-WRL-006 Ephemeral Class I PHW
WhL1D1
UDF-WRL-001
SkP1AF
UDF-WRL-002
UDF-WRL-006
WbC
PEM1C
Bhv1B
WhL1D1
ZnB
WhL1E1
24123
OH-93



LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Addendum Access Road
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Ephemeral Stream
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PFO Wetland
- Addendum Delineated PSS Wetland
- Addendum Delineated PUB Wetland
- NWI Wetland (USFWS)
- Addendum 2 Project Survey Area
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

SbE, Sewell channery fine sandy loam, 20 to 40 percent slopes

SkP1AF, Stokly-Philo silt loams, 0 to 3 percent slopes, frequently flooded

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

Wya1B1—Wyatt silt loam, 2 to 6 percent slopes

ZnB, Zanesville silt loam, 3 to 8 percent slopes

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 2B
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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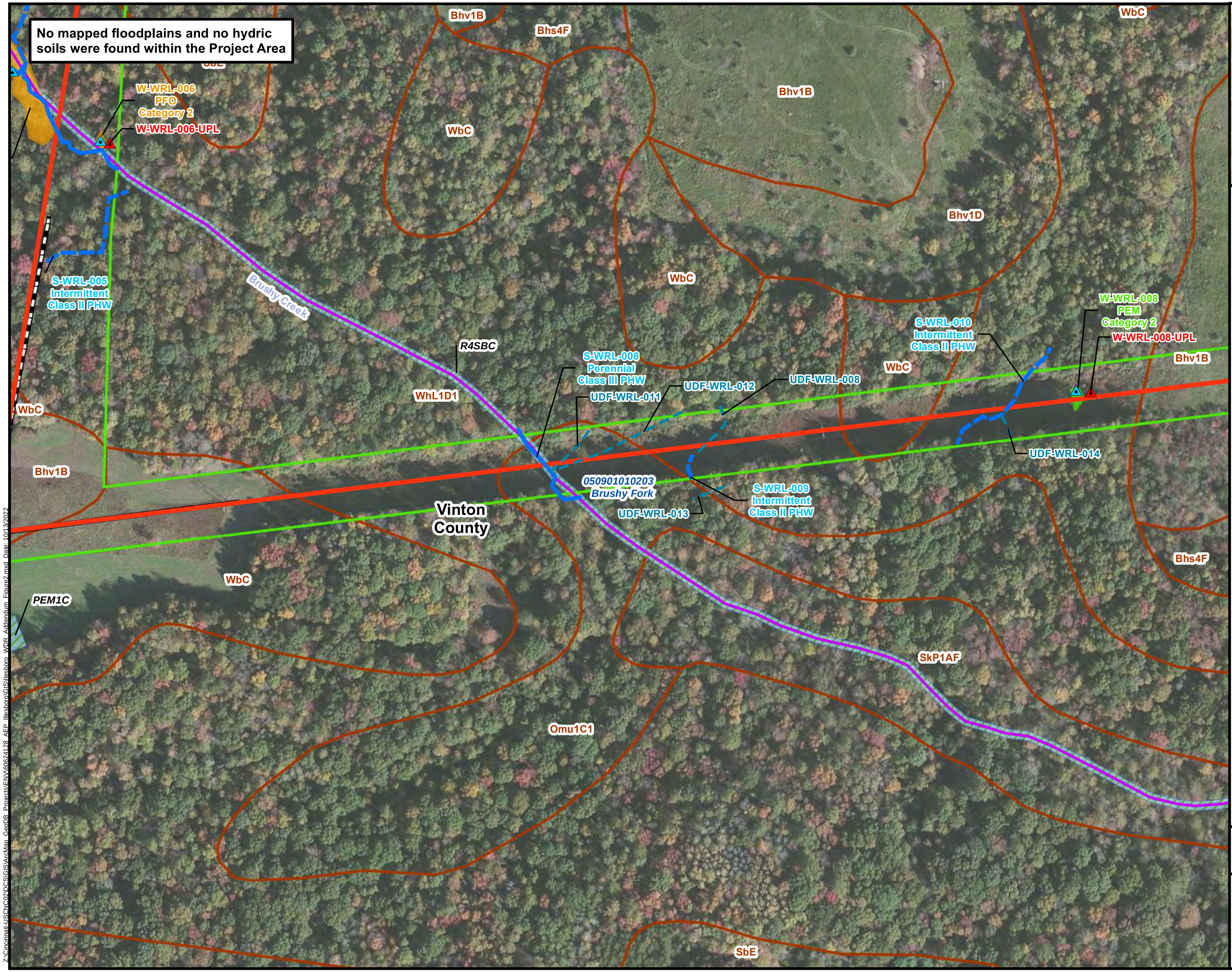

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Addendum Access Road
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PEM Wetland
- Addendum Delineated PFO Wetland
- NWI Wetland (USFWS)
- Addendum 2 Project Survey Area
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

- Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed
- Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed
- Bhv1D, Bethesda silt loam, 8 to 25 percent slopes, reclaimed
- Omu1C1, Omulga silt loam, 6 to 12 percent slopes
- SbE, Sewell channery fine sandy loam, 20 to 40 percent slopes
- SkP1AF, Stokly-Philo silt loams, 0 to 3 percent slopes, frequently flooded
- WbC, Wellston silt loam, 8 to 15 percent slopes
- WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project, Addendum 2

FIGURE 2C
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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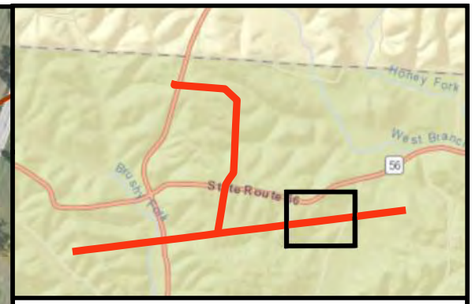
No mapped floodplains and no hydric soils were found within the Project Area

WbC
DF
WbC
WhL1E1
WbC
WhL1D1
Bhv1B
Bhs4F
WhL1D1
WhL1D1
SkP1AF
R4SBC
WhL1D1
Omu1C1
Omu1B1
PUBGx
PUBGx
PUBGx
050901010202
West Branch
Raccoon Creek
050901010203
Brushy Fork
Brushy Creek
W-WRL-010
PUB
Category 2
W-WRL-09/010-UPL
W-WRL-009
PUB
Category 2
UDF-WRL-010
UDF-WRL-009
UDF-WRL-015
UPL-WRL-001
Vinton
County
OH-56
RR198
68199
Shuntz Rd
Shuntz Rd



LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Original Access Road
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated PUB Wetland
- NWI Wetland (USFWS)
- Original Project Survey Area
- Addendum 2 Project Survey Area
- HUC 12 (USGS)
- County Boundary
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Description

Bhs4F, Bethesda channery silt loam, 25 to 70 percent slopes, unreclaimed

Bhv1B, Bethesda silt loam, 0 to 8 percent slopes, reclaimed

Omu1B1, Omulga silt loam, 2 to 6 percent slopes

Omu1C1, Omulga silt loam, 6 to 12 percent slopes

SkP1AF, Stokly-Philo silt loams, 0 to 3 percent slopes, frequently flooded

WbC, Wellston silt loam, 8 to 15 percent slopes

WhL1D1, Wharton-Latham silt loams, 15 to 25 percent slopes

WhL1E1, Wharton-Latham silt loams, 25 to 40 percent slopes

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 2D
SOIL MAP UNIT AND
NATIONAL WETLAND INVENTORY MAP

JOB NO. 60624128

AECOM

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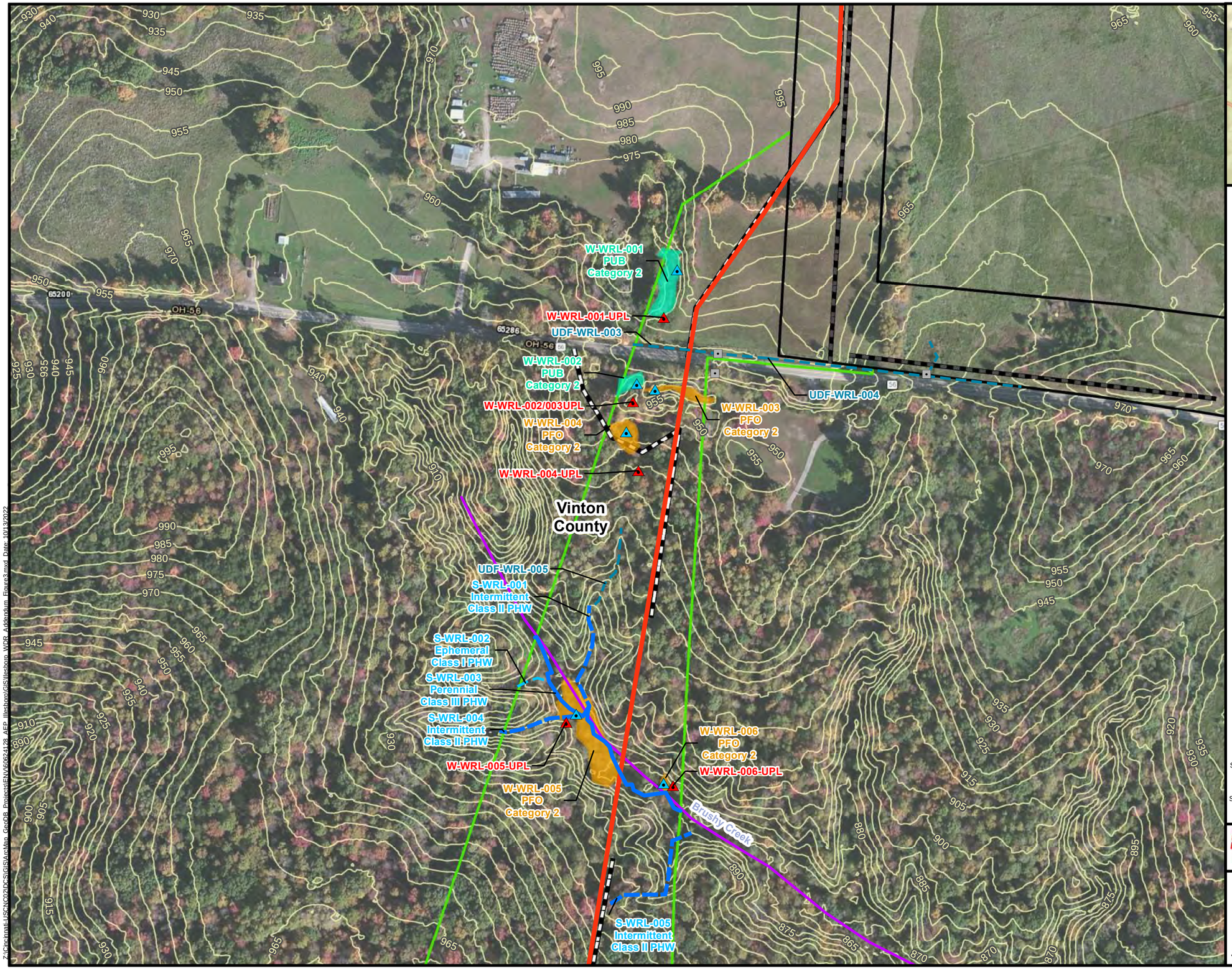

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Original Access Road
- Addendum Access Road
- 5ft Contour Interval
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Ephemeral Stream
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PFO Wetland
- Addendum Delineated PUB Wetland
- Original Project Survey Area
- Addendum 2 Project Survey Area
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 3A
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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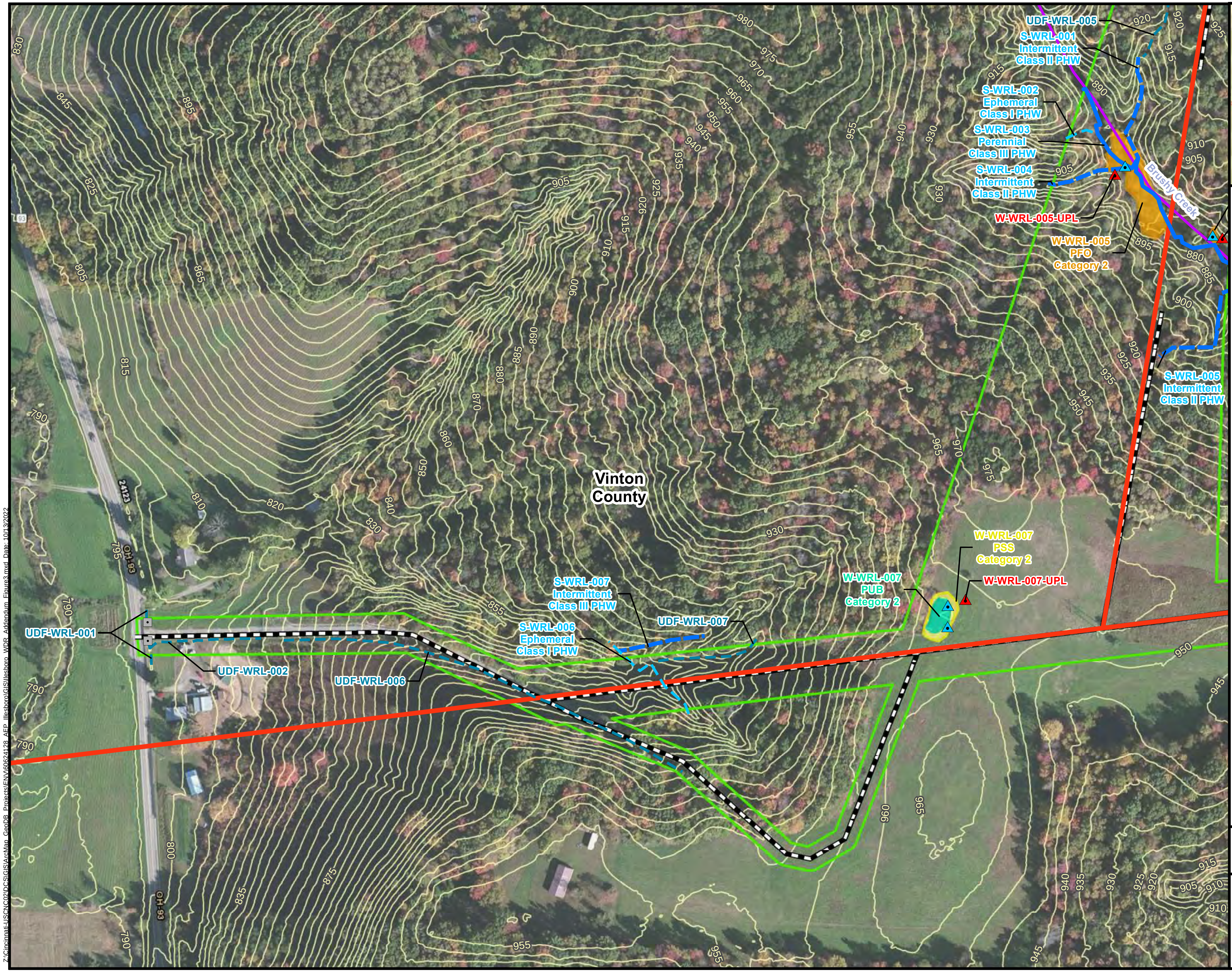

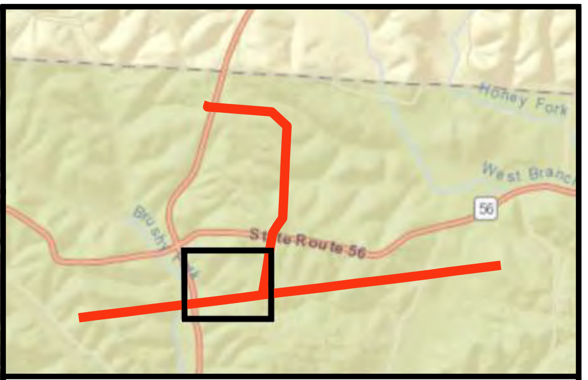

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Addendum Access Road
- 5ft Contour Interval
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Ephemeral Stream
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PFO Wetland
- Addendum Delineated PSS Wetland
- Addendum Delineated PUB Wetland
- Addendum 2 Project Survey Area
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project, Addendum 2

FIGURE 3B
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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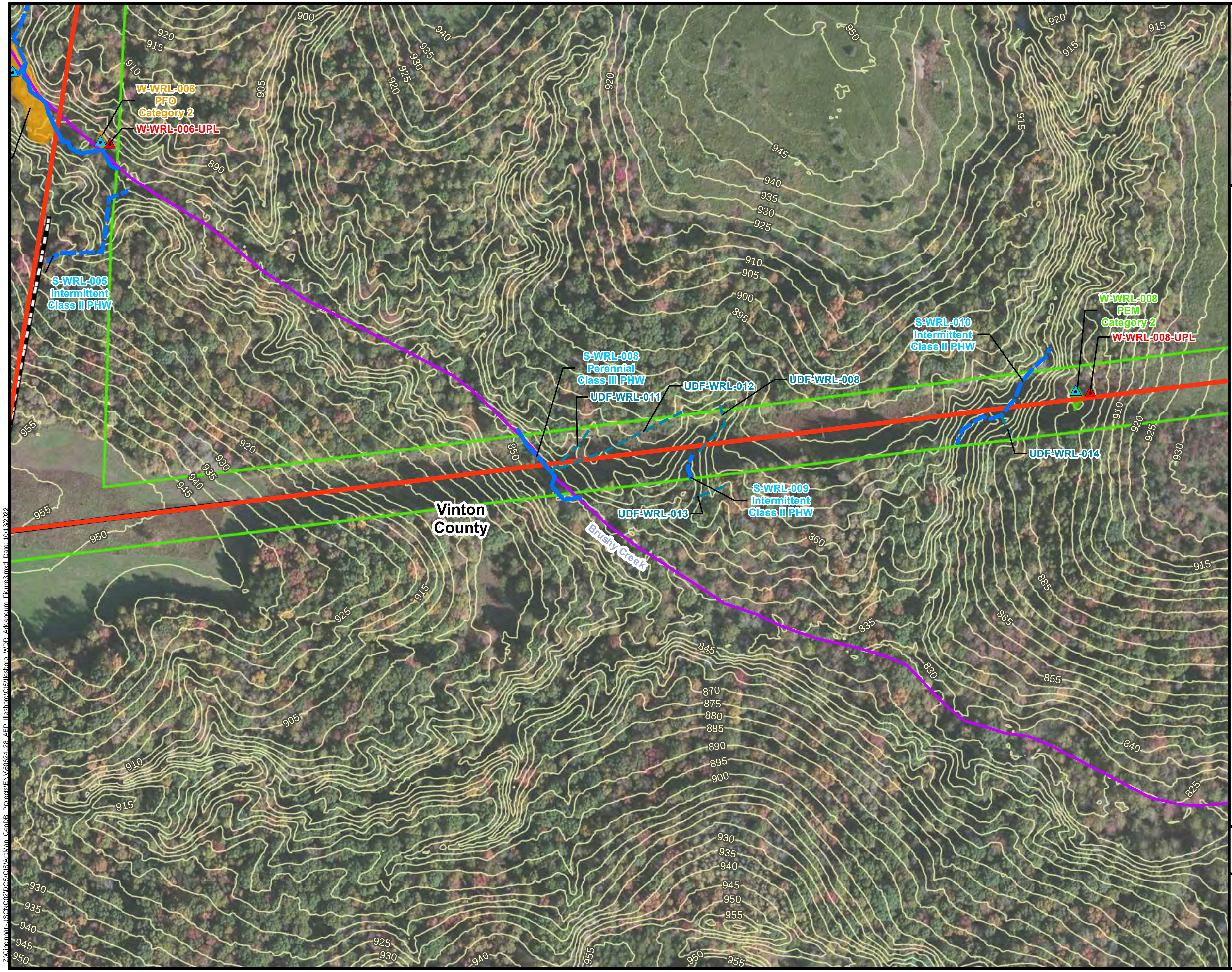

LEGEND:

- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Addendum Access Road
- 5ft Contour Interval
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated Intermittent Stream
- Addendum Delineated Perennial Stream
- Addendum Delineated PEM Wetland
- Addendum Delineated PFO Wetland
- Addendum 2 Project Survey Area
- County Boundary

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project, Addendum 2

FIGURE 3C
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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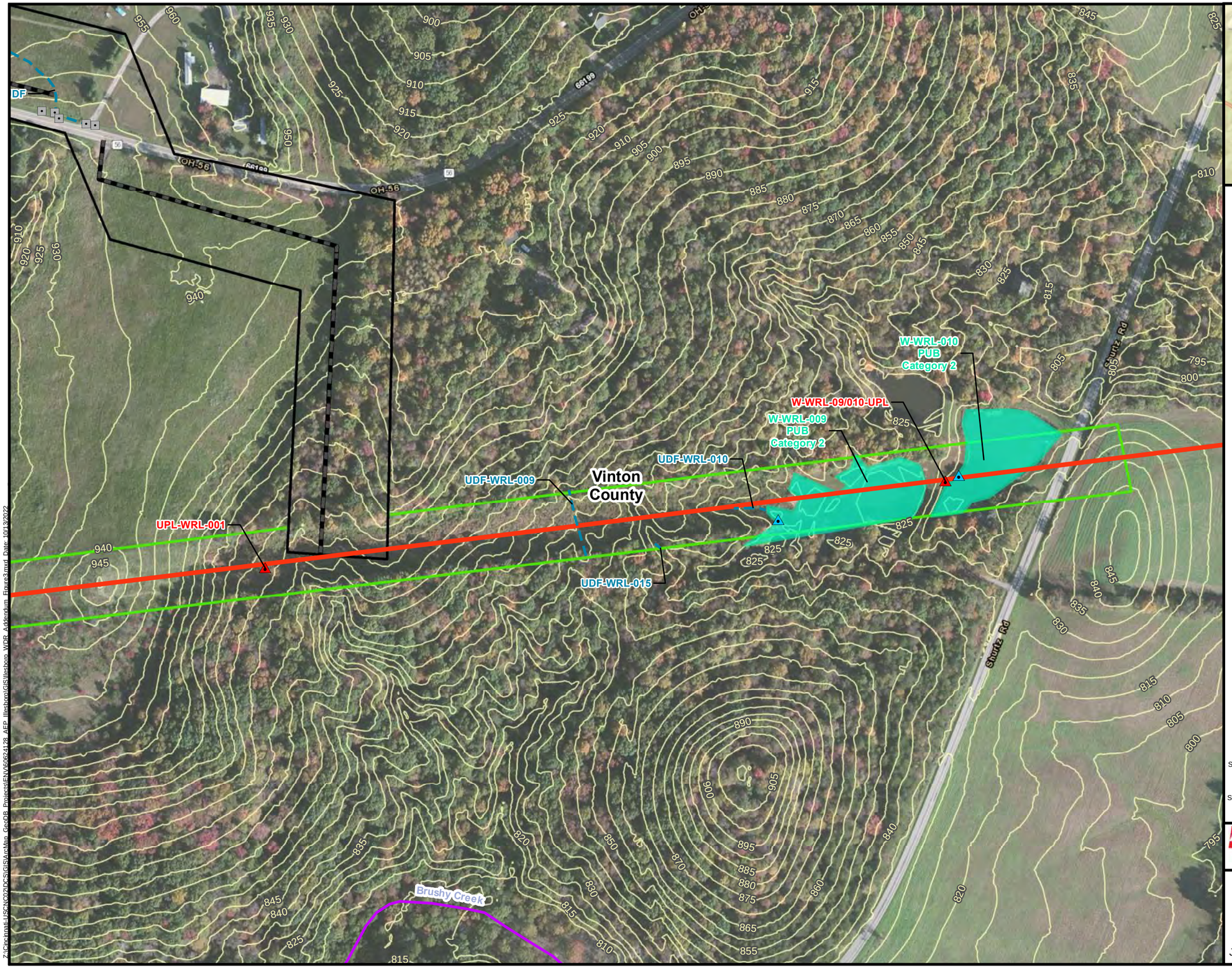

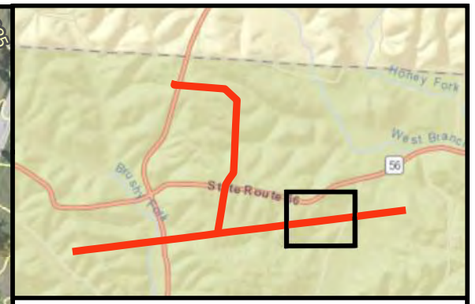

LEGEND:

- Culvert
- Wetland Data Point
- Upland Data Point
- Proposed Ilesboro 138kV Transmission Line
- Original Access Road
- 5ft Contour Interval
- NHD Stream (USGS)
- Upland Drainage Feature
- Addendum Delineated PUB Wetland
- Original Project Survey Area
- Addendum 2 Project Survey Area
- County Boundary

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 3D
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60624128

AECOM

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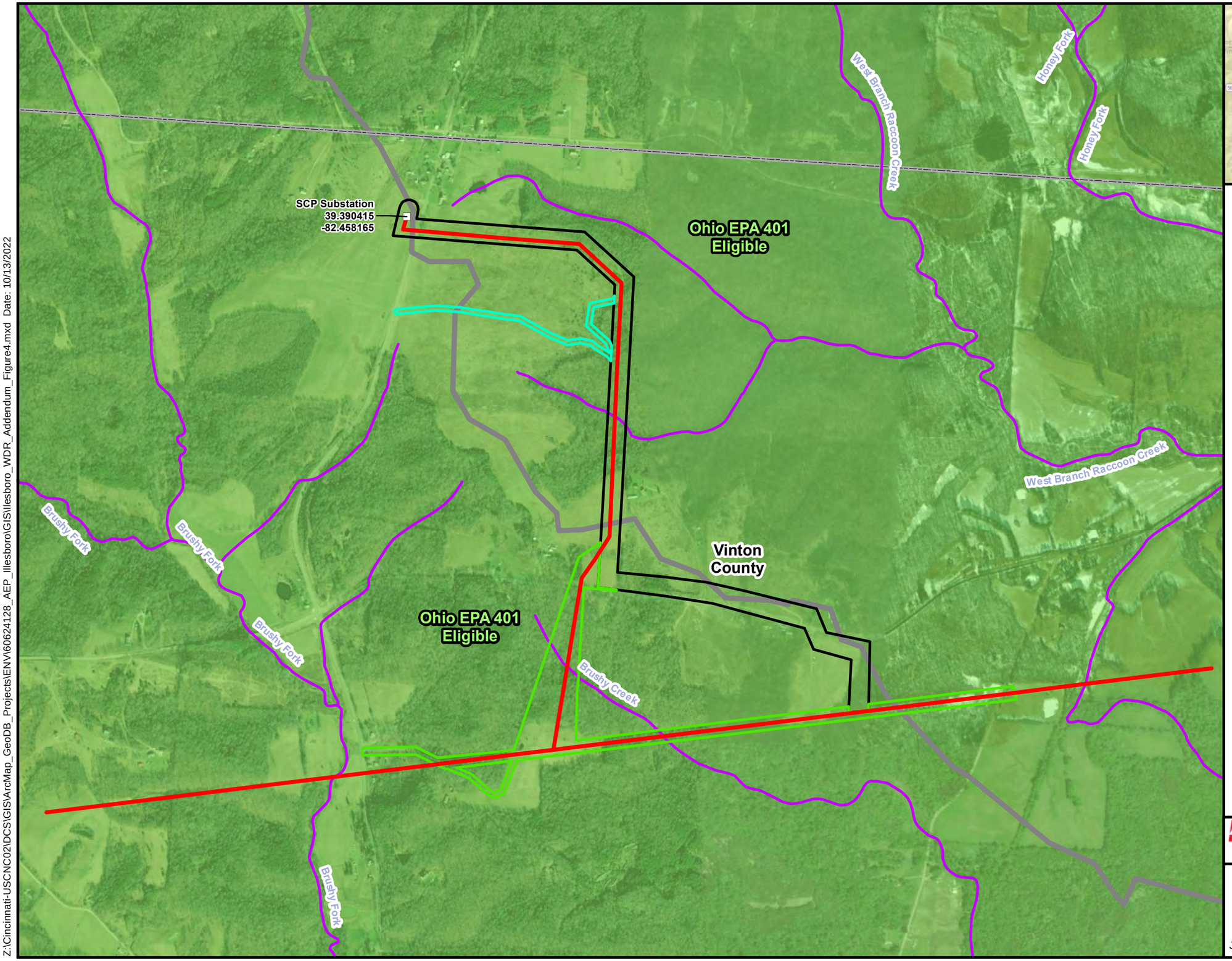

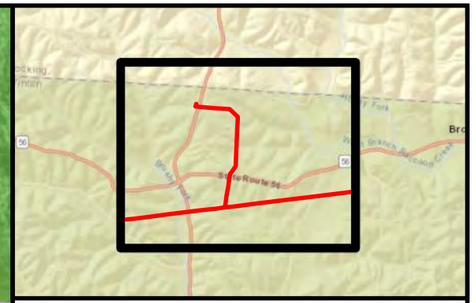

LEGEND:

- Proposed Ilesboro 138 kV Transmission Line
- NHD Stream (USGS)
- Original Project Survey
- Addendum 1 Project Survey
- Addendum 2 Project Survey
- County Boundary

OEPA Stream Eligibility:

- Eligible

N

0 1,000 2,000

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro South Central Power 138 kV Transmission Line Project, Addendum 2

FIGURE 4
STREAM ELIGIBILITY MAP

JOB NO. 60624128

AECOM

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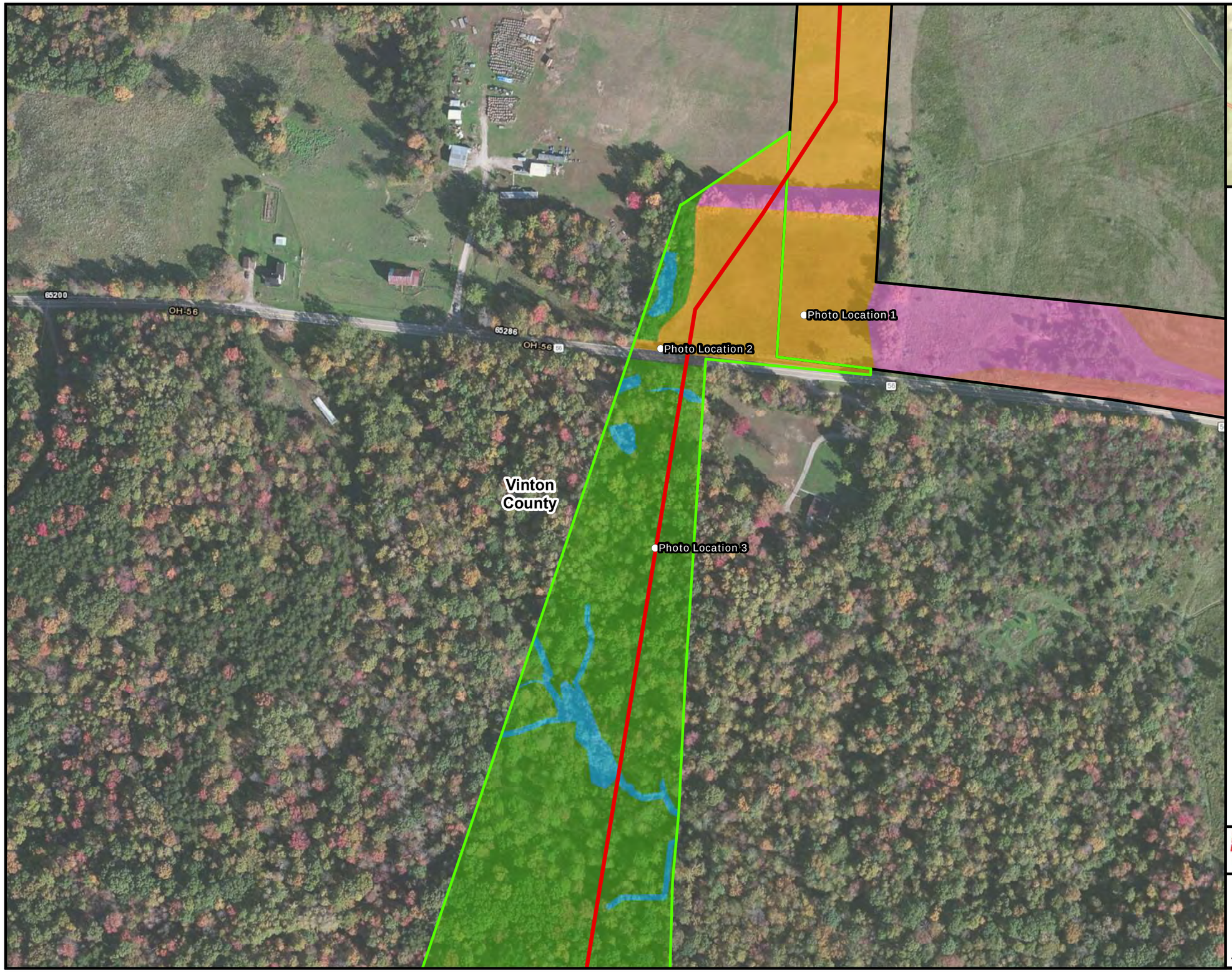

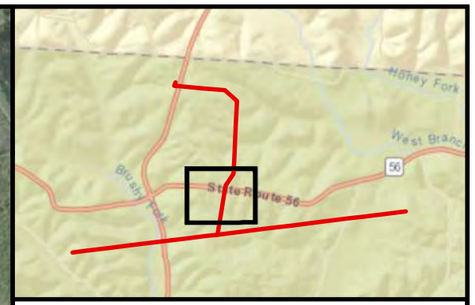

LEGEND:

- Photo Location
- Proposed Illesboro 138 kV Transmission Line
- Original Project Survey Area
- Addendum 2 Project Survey Area
- County Boundary

Vegetation Community Type

- Forest
- Grassland
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 5A
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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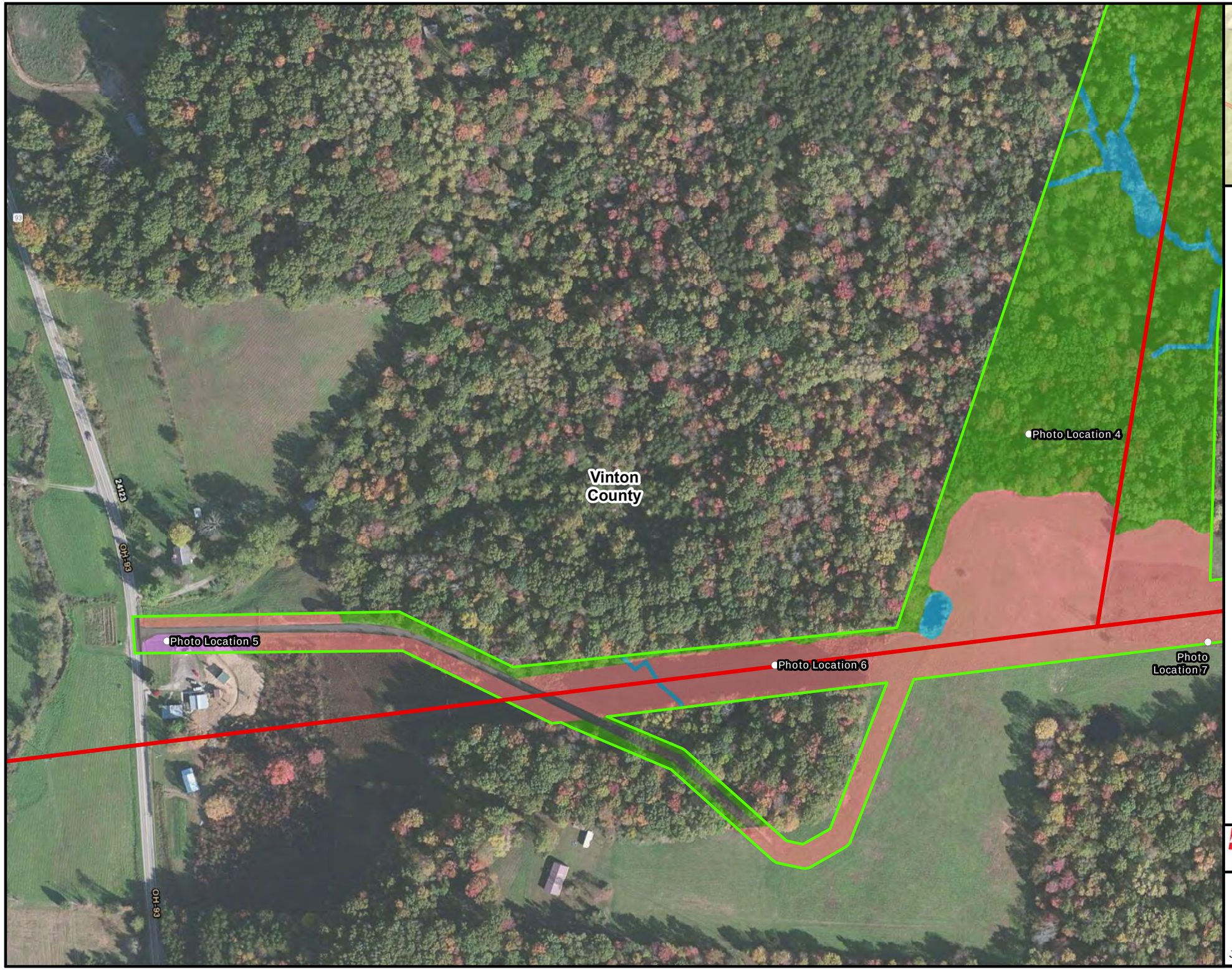

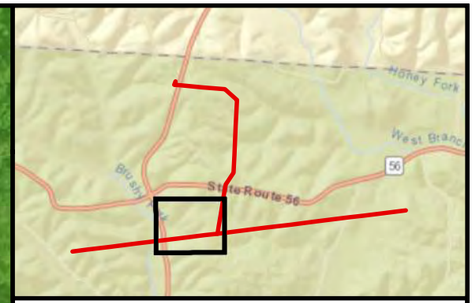

LEGEND:

- Photo Location
- Proposed Illesboro 138 kV Transmission Line
- Addendum 2 Project Survey Area
- County Boundary

Vegetation Community Type

- Forest
- Old Field
- Landscaped Area Stream/
- Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 5B
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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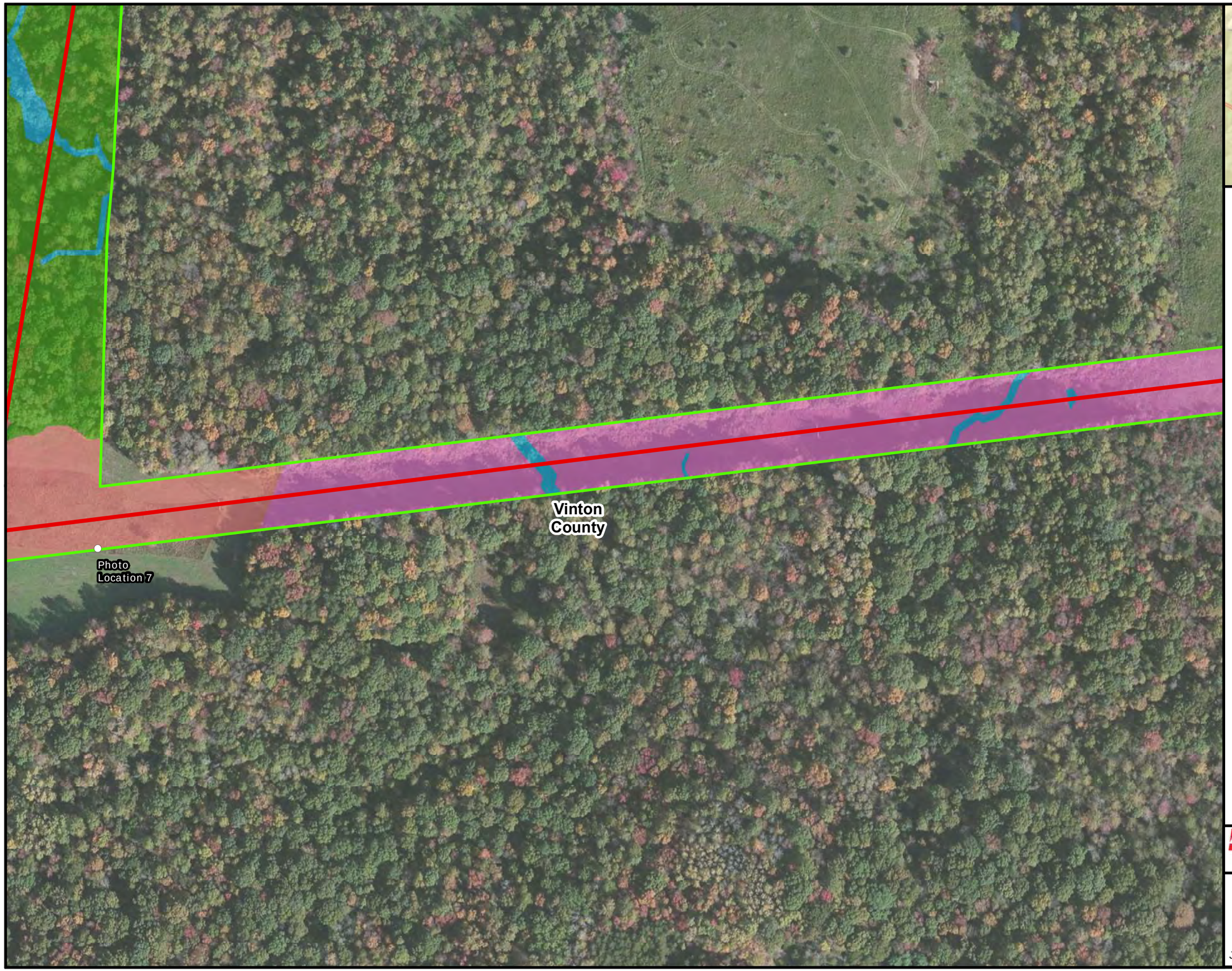
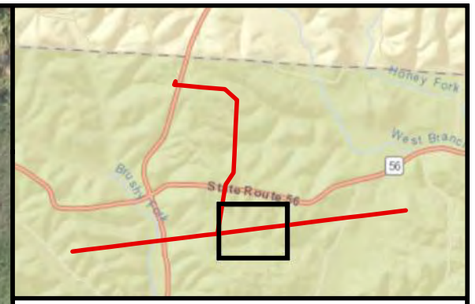




LEGEND:

- Photo Location
- Proposed Illesboro 138 kV Transmission Line
- Addendum 2 Project Survey Area
- County Boundary

Vegetation Community Type

- Forest
- Old Field
- Scrub-Shrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

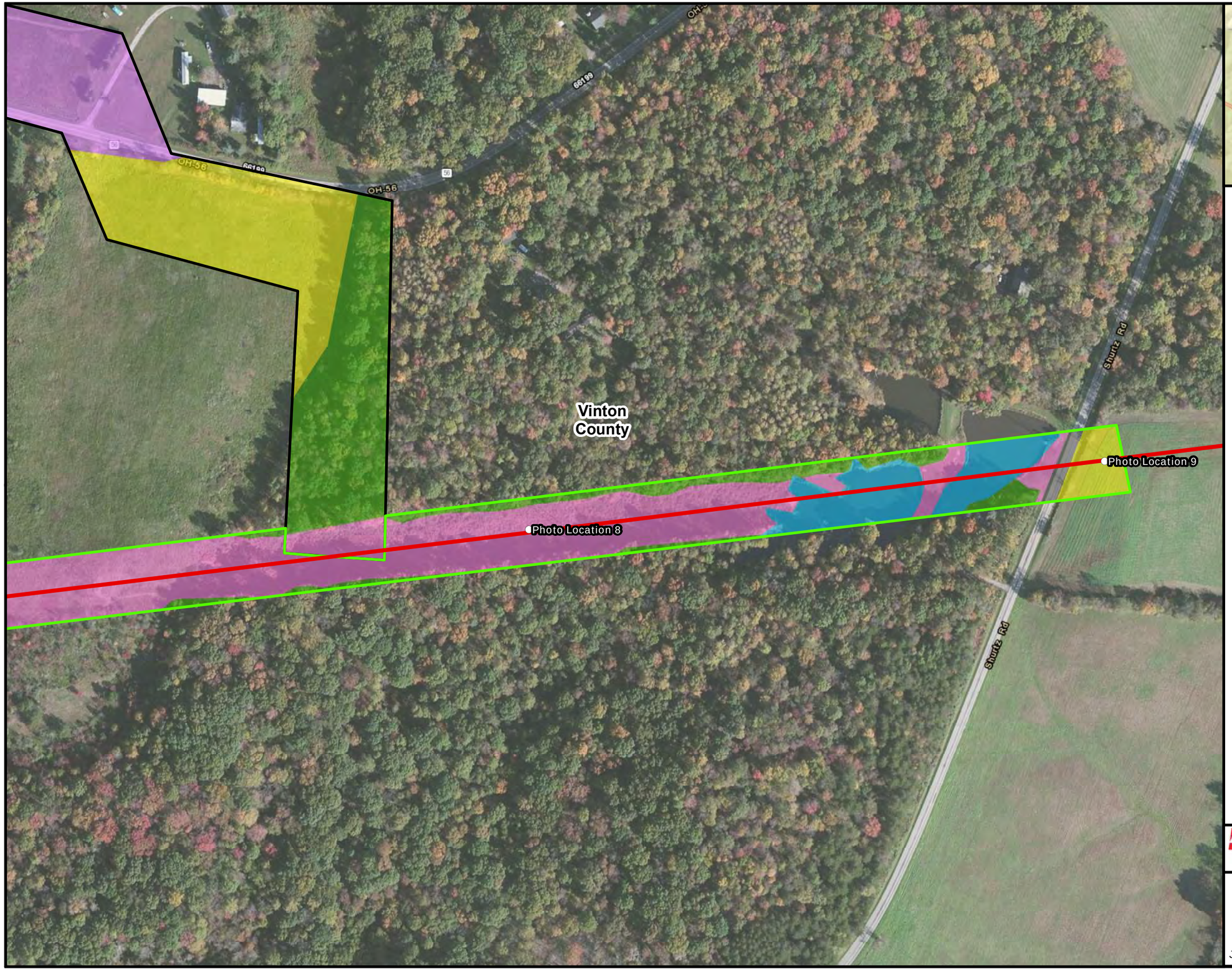
Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

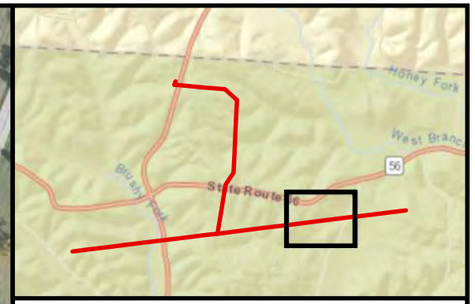
FIGURE 5C
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\MxdMap_GeoDB_Projects\ENV\60624128_AEP_Ilesboro\GIS\Ilesboro_WDR_Addendum_Figure5.mxd Date: 10/13/2022





LEGEND:

- Photo Location
- Proposed Illesboro 138 kV Transmission Line
- Original Project Survey Area
- Addendum 2 Project Survey Area
- County Boundary

Vegetation Community Type

- Forest
- Hay Field/Pasture
- Landscaped Area Scrub-
- Shrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors

AEP OHIO TRANSMISSION COMPANY

Fiddlestix Switch-Ilesboro
South Central Power
138 kV Transmission Line Project,
Addendum 2

FIGURE 5D
VEGETATION COMMUNITIES MAP

JOB NO. 606124128

AECOM

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APPENDIX A

Project Wetland Table

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV T-LINE PROJECT-ADDENDUM 2
WETLAND TABLE

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
W-WRL-001	39.38004	-82.45170	Yes	PUB	0.10	46	2	Existing: N/A Proposed: 5	N/A	None	TBD	TBD	TBD
W-WRL-002	39.37937	-82.45200	Yes	PUB	0.03	41	2	Existing: N/A Proposed: 4	N/A	None	TBD	TBD	TBD
W-WRL-003	39.37934	-82.45186	Yes	PFO	0.03	44	2	Existing: N/A Proposed: 4	N/A	None	TBD	TBD	TBD
W-WRL-004	39.37909	-82.45208	No	PFO	0.06	46	2	Existing: N/A Proposed: 4	N/A	None	TBD	TBD	TBD
W-WRL-005	39.37745	-82.45245	No	PFO	0.25	59	2	Existing: N/A Proposed: 2	N/A	None	TBD	TBD	TBD
W-WRL-006	39.37705	-82.45180	No	PFO	0.01	55	2	Existing: N/A Proposed: 2	N/A	None	TBD	TBD	TBD
W-WRL-007	39.37478	-82.45378	No	PSS	0.06	57	2	Existing: 90 Proposed: TBD	N/A	None	TBD	TBD	TBD
	39.37490	-82.45378		PUB	0.05				N/A	None	TBD	TBD	TBD
W-WRL-008	39.37559	-82.44450	No	PEM	0.01	34	2	Existing: 86 Proposed: TBD	N/A	None	TBD	TBD	TBD
W-WRL-009	39.37607	-82.43777	No	PUB	0.81	55	2	Existing: 84 Proposed: TBD	N/A	None	TBD	TBD	TBD
W-WRL-010	39.37633	-82.43641	No	PUB	0.71	54	2	Existing: 84 Proposed: TBD	N/A	None	TBD	TBD	TBD
Total:					**2.120**							**TBD**	**TBD**

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

APPENDIX B

U.S Army Corps of Engineers Wetland Determination Data Forms

OEPA Wetland ORAM Forms

Delineated Features Photographs

(combined per wetland and shown in numerical order)

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-001
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Undulated pool Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 39.38004 Long: -82.45170 Datum: WGS84
Soil Map Unit Name: WbC: Wellston silt loam, 8 to 15 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PUB wetland- a stagnant pool in wooded area, potentially an old strip mine pit. The wetland boundary was delineated by watermarks on trees. The wetland extends northwest, outside the study area. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and one secondary wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-001

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula nigra*	60	Yes	FACW
2. *Acer saccharinum*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula nigra*	5	Yes	FACW
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		160 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-001

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- _X_ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

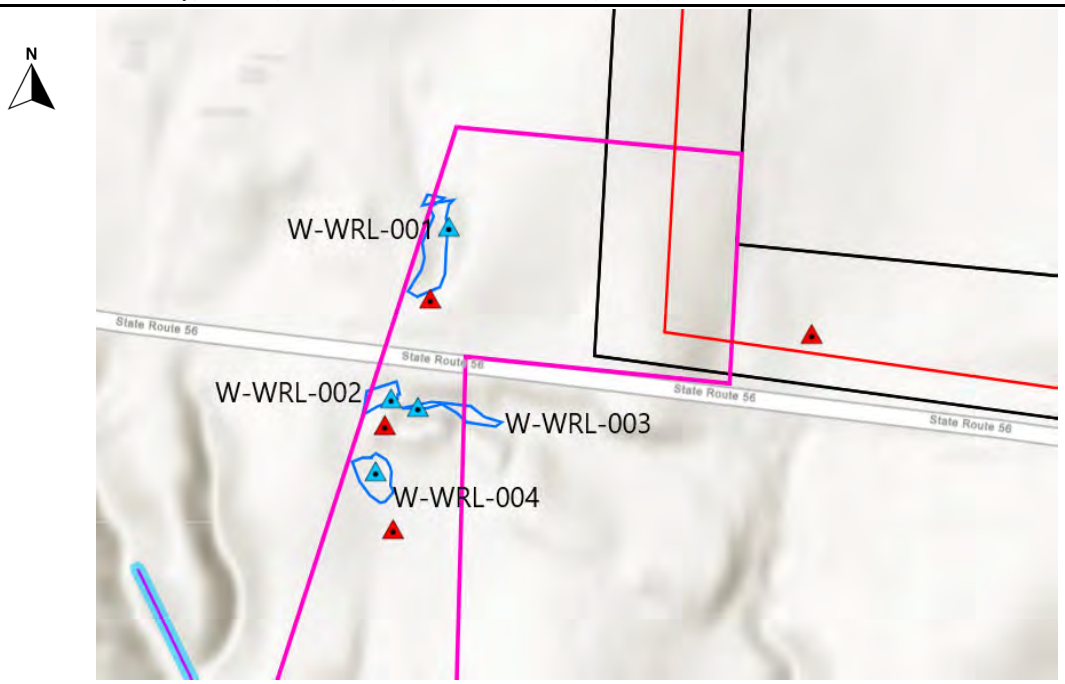
Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

Soil pit not dug due to hydrogen sulfide odor hydic soil indicator present.

Background Information	
Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-001**
Vegetation Communit(ies):	**PUB**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

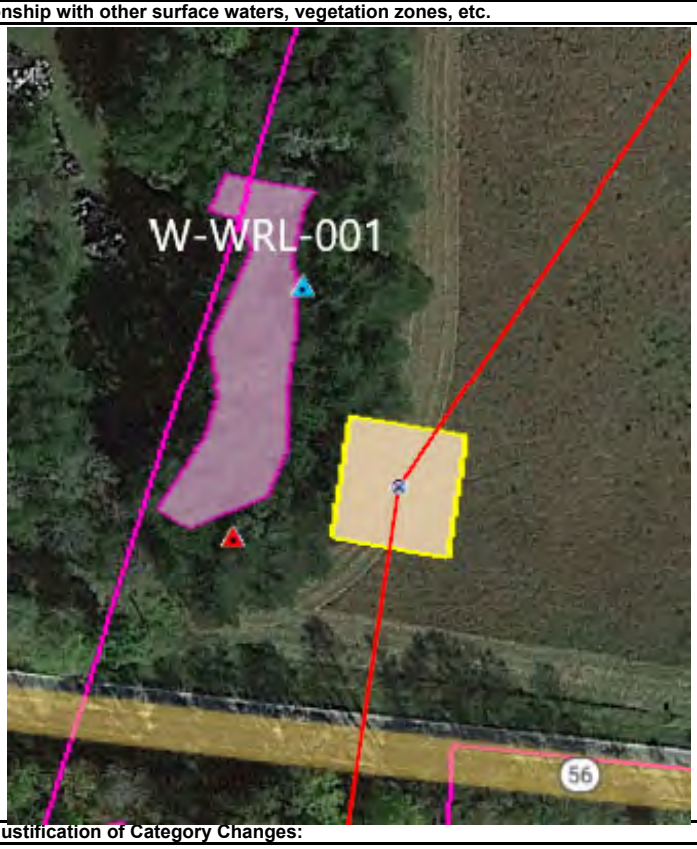


Lat/Long or UTM Coordinate:	**39.38004, -82.45170**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-001		
Wetland Size (delineated acres):	0.10	Wetland Size (Estimated total acres):	0.10

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N



Comments, Narrative Discussion, Justification of Category Changes:

PUB wetland- a stagnant pool in wooded area, potentially an old strip mine pit. The wetland boundary was delineated by watermarks on trees. The wetland extends northewest, outside the study area. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	46	Category:	2

Wetland ID:	W-WRL-001

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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-001

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-001

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

Wetland ID:	W-WRL-001

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-001

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-001

Delineated acres:	0.10
Total acres:	0.10

Metric 1. Wetland Area (size).

1.0 / 1.0 (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)
- [ ] 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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

6.0 / 7.0 (max 14 pts. / subtotal)

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

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

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

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] 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)

Metric 3. Hydrology.

19.0 / 26.0 (max 30 pts. / subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [x] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [x] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

12.0 / 38.0 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

38.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-001

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:
W-WRL-001

38.0
subtotal this page

0.0 max 10 pts. **38.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

8.0 max 20pts. **46.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [0] Shrub
- [0] Forest
- [ ] Mudflats
- [2] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [x] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer 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)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [2] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

46.0 **TOTAL (Max 100 pts)**
2 **Category**

Wetland ID:	W-WRL-001

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**1**		
	Metric 2. Buffers and surrounding land use	**6**		
	Metric 3. Hydrology	**19**		
	Metric 4. Habitat	**12**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**8**		
	TOTAL SCORE	**46**		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-001

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-001 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing North	

Wetland W-WRL-001 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing East	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-001 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing South	

Wetland W-WRL-001 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-001	
Date: September 1, 2022	
Description: PUB Category 2 Soils	

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-001-UPL
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Convex Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 39.37976 Long: -82.45180 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-001. Hydrophytic vegetation indicator present, but lacking hydric soil and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
Only one secondary hydrology indicator present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-001-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus virginiana*	50	Yes	UPL
2. *Acer saccharinum*	20	Yes	FACW
3. *Cornus florida*	15	No	FACU
4.			
5.			
6.			
7.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Cornus florida*	15	Yes	FACU
2. *Betula nigra*	15	Yes	FACW
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4. *Carya ovata*	3	No	FACU
5. *Ligustrum vulgare*	3	No	FACU
6. *Rosa multiflora*	2	No	FACU
7.			
8.			
9.			
	48	=Total Cover	
50% of total cover: 24		20% of total cover:	10
Herb Stratum (Plot size: 5' r)			
1. *Carex blanda*	20	Yes	FAC
2. *Desmodium canadense*	5	No	FAC
3. *Fraxinus pennsylvanica*	15	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	=Total Cover	
50% of total cover: 20		20% of total cover:	8
Woody Vine Stratum (Plot size: 30' r)			
1. *Toxicodendron radicans*	20	Yes	FAC
2. *Parthenocissus quinquefolia*	5	No	FACU
3. *Lonicera japonica*	20	Yes	FACU
4.			
5.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	45	x 3 =	135
FACU species	63	x 4 =	252
UPL species	50	x 5 =	250
Column Totals:	218 (A)		757 (B)

Prevalence Index = B/A = 3.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: W-WRL-001-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Loamy/Clayey	
3-14	10YR 4/6	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-002
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat: 39.37937 Long: -82.45200 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PUB wetland- a stagnant pool in wooded area, potentially an old strip mine pit. The wetland boundary was delineated by watermarks on trees. Trash, bottles, tires abundant. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary wetland hydrology indicators and one secondary indicator present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-002

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Diospyros virginiana*	35	Yes	FAC
2. *Platanus occidentalis*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover:	11
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rosa multiflora*	10	Yes	FACU
2. *Diospyros virginiana*	5	Yes	FAC
3. *Lindera benzoin*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Herb Stratum (Plot size: 5' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	75 (A)		215 (B)

Prevalence Index = B/A = 2.87

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: W-WRL-002

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	80	10YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

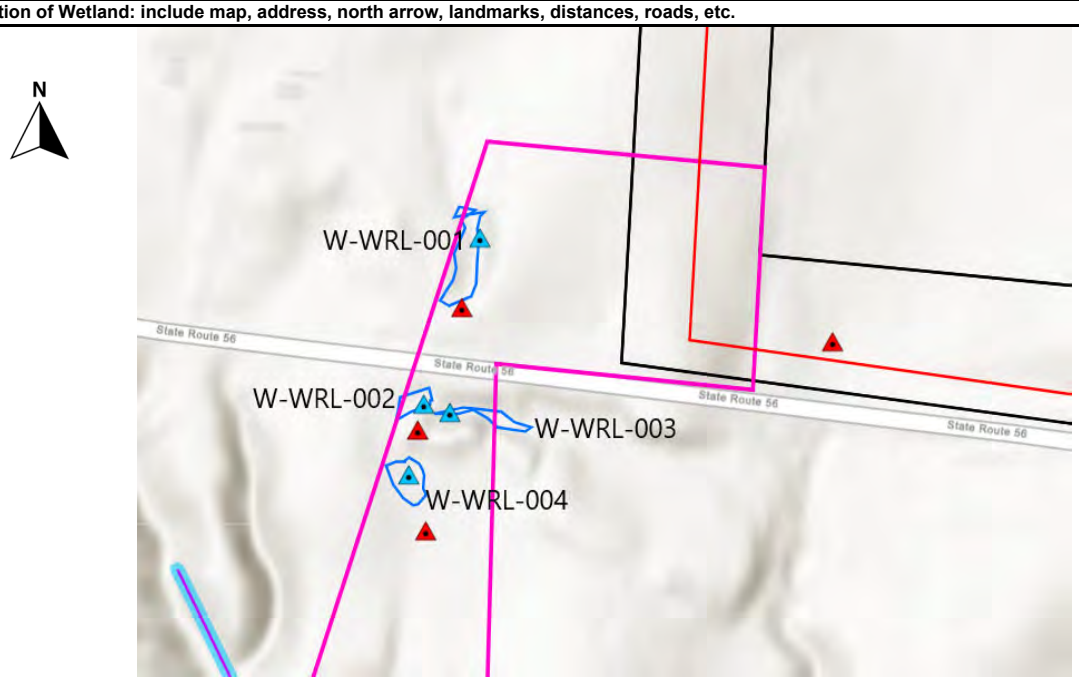
Remarks:

Multiple primary hydric soil indicators present.

Background Information

Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-002**
Vegetation Communit(ies):	**PUB**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37937, -82.45200**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-002		
Wetland Size (delineated acres):	0.03	Wetland Size (Estimated total acres):	0.03

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PUB wetland- a stagnant pool in wooded area, potentially an old strip mine pit. The wetland boundary was delineated by watermarks on trees. Trash, bottles, tires abundant. Precipitation has been higher than average within the past 90 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	41	Category:	Modified 2

Wetland ID:	W-WRL-002

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-002

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-002

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

Wetland ID:	W-WRL-002

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-002

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-002

Delineated acres:	0.03
Total acres:	0.03

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

9.0 (max 14 pts.) | 9.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

15.0 (max 30 pts.) | 24.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [x] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.0 (max 20 pts.) | 35.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

35.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-002

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:
W-WRL-002

35.0
subtotal this page

0.0 max 10 pts. | **35.0** 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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6.0 max 20pts. | **41.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
0	Shrub
0	Forest
	Mudflats
1	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

41.0 TOTAL (Max 100 pts)

Modified 2 Category

Wetland ID:	W-WRL-002

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	15		
	Metric 4. Habitat	11		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	6		
	TOTAL SCORE	41		Category based on score breakpoints Modified 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-002

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-002 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing North	

Wetland W-WRL-002 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-002 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing South	

Wetland W-WRL-002 **Date:** September 1, 2022 **Description:** PUB Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-002	
Date: September 1, 2022	
Description: PUB Category 2 Soils	

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-002-003-UPL
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Convex Slope (%): 10
Subregion (LRR or MLRA): LRR N Lat: 39.37927 Long: -82.45203 Datum: WGS84
Soil Map Unit Name: SbE: Sewell channery fine sandy loam, 20 to 40 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetlands W-WRL-002 and W-WRL-003, located on spoil piles between wetlands. Hydrophytic vegetation indicator present, but lacking hydric soil and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-002-003-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liriodendron tulipifera*	50	Yes	FACU
2. *Acer saccharinum*	25	Yes	FACW
3. *Carya ovata*	10	No	FACU
4.			
5.			
6.			
7.			
	85	=Total Cover	
50% of total cover: 43	20% of total cover:	17	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Diospyros virginiana*	15	Yes	FAC
2. *Elaeagnus umbellata*	10	Yes	UPL
3. *Cornus florida*	5	No	FACU
4. *Quercus rubra*	3	No	FACU
5. *Rosa multiflora*	3	No	FACU
6.			
7.			
8.			
9.			
	36	=Total Cover	
50% of total cover: 18	20% of total cover:	8	
Herb Stratum (Plot size: 5' r)			
1. *Lycopodium clavatum*	65	Yes	FAC
2. *Diospyros virginiana*	10	No	FAC
3. *Betula nigra*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80	=Total Cover	
50% of total cover: 40	20% of total cover:	16	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	90	x 3 =	270
FACU species	71	x 4 =	284
UPL species	10	x 5 =	50
Column Totals:	201 (A)		664 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-002-003-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 5/4	100					Loamy/Clayey	
6-16	7.5YR 6/4	70	7.5YR 6/2	30	D	M	Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-003
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N Lat: 39.37934 Long: -82.45186 Datum: WGS84
Soil Map Unit Name: SbE: Sewell channery fine sandy loam, 20 to 40 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PFO wetland- potentially an old strip mine pit. Evidence of acid mine drainage into wetland. The wetland boundary was delineated by topography. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicators, and hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and secondary wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-003

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	20	Yes	FACW
2. *Acer saccharinum*	10	Yes	FACW
3. *Quercus bicolor*	5	No	FACW
4.			
5.			
6.			
7.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Diospyros virginiana*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Herb Stratum (Plot size: 5' r)			
1. *Boehmeria cylindrica*	10	Yes	FACW
2. *Lycopodium clavatum*	10	Yes	FAC
3. *Lycopus americanus*	2	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	22	=Total Cover	
50% of total cover: 11		20% of total cover:	5
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	50	x 2 =	100
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	67 (A)		147 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: W-WRL-003

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	80	10YR 3/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
4-16	10YR 5/1	60	7.5YR 4/4	40	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

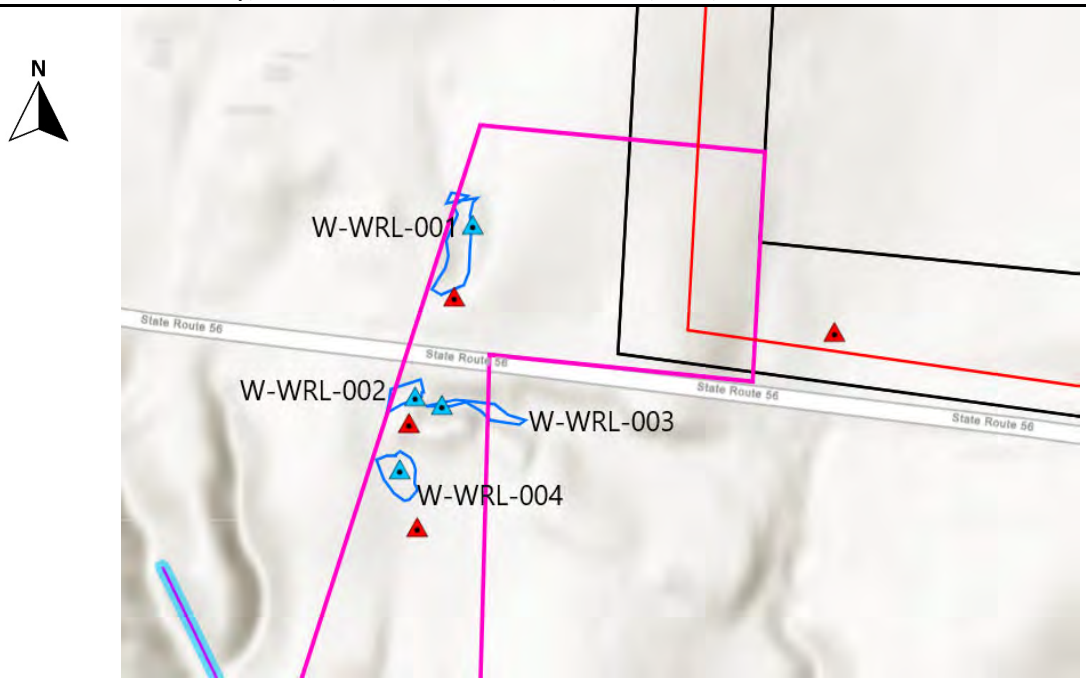
Remarks:

Hydric soil indicators present. Coal fines within the first four inches.

Background Information

Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-003**
Vegetation Communit(ies):	**PFO**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37934, -82.45186**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 712N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-003		
Wetland Size (delineated acres):	0.03	Wetland Size (Estimated total acres):	0.03

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PFO wetland- potentially an old strip mine pit. Evidence of acid mine drainage into wetland. The wetland boundary was delineated by topography. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicators, and hydric soil indicators present.

Final score:	44	Category:	Modified 2

Wetland ID:	W-WRL-003

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-003

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-003

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

Wetland ID:	W-WRL-003

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-003

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-003

Delineated acres:	0.03
Total acres:	0.03

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

9.0 (max 14 pts.) | 9.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

17.0 (max 30 pts.) | 26.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [x] Other groundwater (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [x] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.0 (max 20 pts.) | 37.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

37.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-003

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:
W-WRL-003

37.0
subtotal this page

0.0 max 10 pts. | **37.0** 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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

7.0 max 20pts. | **44.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
0	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
2	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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 (0.88 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

44.0 TOTAL (Max 100 pts)

Modified 2 Category

Wetland ID:	W-WRL-003

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	17		
	Metric 4. Habitat	11		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	7		
	TOTAL SCORE	44		Category based on score breakpoints Modified 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-003

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-003

Date:

September 1, 2022

Description:

PFO

Category 2

Facing North

Wetland W-WRL-003

Date:

September 1, 2022

Description:

PFO

Category 2

Facing East

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-003
Date: September 1, 2022
Description: PFO Category 2 Facing South

Wetland W-WRL-003
Date: September 1, 2022
Description: PFO Category 2 Facing West

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-003

Date:

September 1, 2022

Description:

PFO

Category 2

Soil Pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-004
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10
Subregion (LRR or MLRA): LRR N Lat: 39.37909 Long: -82.45208 Datum: WGS84
Soil Map Unit Name: SbE: Sewell channery fine sandy loam, 20 to 40 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PFO wetland downslope of wetlands W-WRL-002 and W-WRL-003. The wetland boundary was delineated by vegetation and soils. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicators, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
One primary and two secondary wetland hydrology indicators are present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-004

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Quercus bicolor*	25	Yes	FACW
3. *Liriodendron tulipifera*	5	No	FACU
4.			
5.			
6.			
7.			
	70	=Total Cover	
50% of total cover: 35	20% of total cover:	14	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2. *Quercus bicolor*	10	No	FACW
3. *Rosa multiflora*	10	No	FACU
4. *Carpinus caroliniana*	10	No	FAC
5. *Lindera benzoin*	5	No	FAC
6. *Acer rubrum*	25	Yes	FAC
7.			
8.			
9.			
	80	=Total Cover	
50% of total cover: 40	20% of total cover:	16	
Herb Stratum (Plot size: 5' r)			
1. *Thelypteris palustris*	50	Yes	FACW
2. *Onoclea sensibilis*	10	No	FACW
3. *Cinna arundinacea*	5	No	FACW
4. *Boehmeria cylindrica*	3	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	68	=Total Cover	
50% of total cover: 34	20% of total cover:	14	
Woody Vine Stratum (Plot size: 30' r)			
1. *Smilax rotundifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5	20% of total cover:	2	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	123	x 2 =	246
FAC species	90	x 3 =	270
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	228 (A)		576 (B)

Prevalence Index = B/A = 2.53

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-004

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	50	10YR 5/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
3-15	10YR 6/2	80	10YR 4/6	20	C	PL/M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

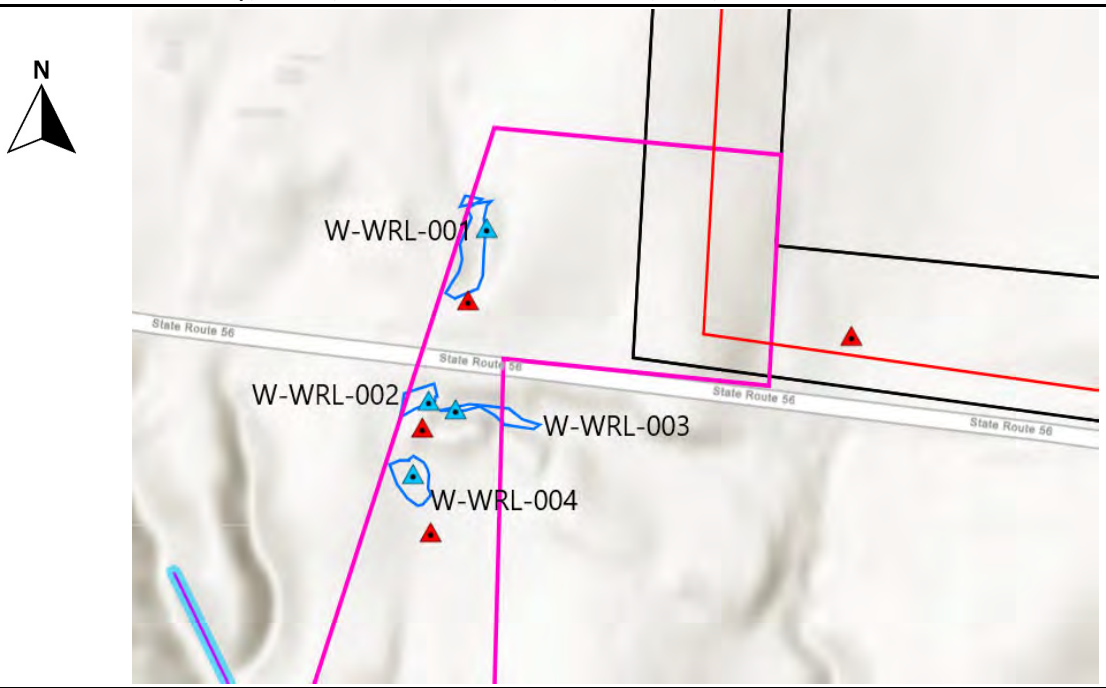
Remarks:

Hydic soil indicator present.

Background Information

Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-004**
Vegetation Communit(ies):	**PFO**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37909, -82.45208**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-004		
Wetland Size (delineated acres):	0.06	Wetland Size (Estimated total acres):	0.06

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PFO wetland downslope of wetlands W-WRL-002 and W-WRL-003. The wetland boundary was delineated by vegetation and soils. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicators, and hydric soil indicator present.

Final score:	46	Category:	2

Wetland ID:	W-WRL-004

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-004

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-004

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

Wetland ID:	W-WRL-004

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-004

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-004

Delineated acres:	0.06
Total acres:	0.06

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

14.0 (max 14 pts.) | 14.0 (subtotal)

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

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

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

- [x] 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)

Metric 3. Hydrology.

12.0 (max 30 pts.) | 26.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [x] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

14.0 (max 20 pts.) | 40.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [x] 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)
- [x] 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)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

40.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-004

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:
W-WRL-004

40.0
subtotal this page

0.0 max 10 pts. | **40.0** 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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6.0 max 20pts. | **46.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
0	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
x	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

46.0	**TOTAL (Max 100 pts)**
2	**Category**

Wetland ID:	W-WRL-004

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**0**		
	Metric 2. Buffers and surrounding land use	**14**		
	Metric 3. Hydrology	**12**		
	Metric 4. Habitat	**14**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**6**		
	TOTAL SCORE	**46**		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-004

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-004 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing North	

Wetland W-WRL-004 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-004

Date:

September 1, 2022

Description:

PFO

Category 2

Facing South

Wetland W-WRL-004

Date:

September 1, 2022

Description:

PFO

Category 2

Facing West

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-004

Date:

September 1, 2022

Description:

PFO

Category 2

Soil Pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-004-UPL
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10
Subregion (LRR or MLRA): LRR N Lat: 39.37887 Long: -82.45199 Datum: WGS84
Soil Map Unit Name: SbE: Sewell channery fine sandy loam, 20 to 40 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-004. Hydrophytic vegetation indicator present, but lacking hydric soil and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-004-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Liriodendron tulipifera*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Lindera benzoin*	35	Yes	FAC
2. *Rosa multiflora*	10	No	FACU
3. *Betula nigra*	3	No	FACW
4. *Carpinus caroliniana*	3	No	FAC
5.			
6.			
7.			
8.			
9.			
	51	=Total Cover	
50% of total cover: 26		20% of total cover:	11
Herb Stratum (Plot size: 5' r)			
1. *Polystichum acrostichoides*	20	Yes	FACU
2. *Rubus idaeus*	10	Yes	FAC
3. *Galium aparine*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Woody Vine Stratum (Plot size: 30' r)			
1. *Parthenocissus quinquefolia*	3	No	FACU
2.			
3.			
4.			
5.			
	3	=Total Cover	
50% of total cover: 2		20% of total cover:	1

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	108	x 3 =	324
FACU species	58	x 4 =	232
UPL species	0	x 5 =	0
Column Totals:	169 (A)		562 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-004-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	
3-7	10YR 4/3	100					Loamy/Clayey	
7-15	10YR 5/4	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-005
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Bottom lands Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): LRR N Lat: 39.37745 Long: -82.45245 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: R4SBC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PFO wetland at the confluence of three small streams S-WRL-001, S-WRL-003, and S-WRL-004. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and secondary wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-WRL-005

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	35	Yes	OBL
2. *Betula nigra*	10	No	FACW
3. *Liriodendron tulipifera*	10	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover:	11
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Betula nigra*	10	Yes	FACW
2. *Rosa multiflora*	25	Yes	FACU
3. *Lindera benzoin*	15	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Herb Stratum (Plot size: 5' r)			
1. *Impatiens capensis*	30	Yes	FACW
2. *Boehmeria cylindrica*	25	Yes	FACW
3. *Dichanthelium clandestinum*	10	No	FAC
4. *Scirpus atrovirens*	15	No	OBL
5. *Juncus effusus*	5	No	FACW
6. *Persicaria virginiana*	3	No	FAC
7. *Leersia virginica*	5	No	FACW
8. *Cinna arundinacea*	5	No	FACW
9.			
10.			
11.			
	98	=Total Cover	
50% of total cover: 49		20% of total cover:	20
Woody Vine Stratum (Plot size: 30' r)			
1. *Vitis aestivalis*	2	No	FACU
2.			
3.			
4.			
5.			
	2	=Total Cover	
50% of total cover: 1		20% of total cover:	1

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	90	x 2 =	180
FAC species	28	x 3 =	84
FACU species	37	x 4 =	148
UPL species	0	x 5 =	0
Column Totals:	205 (A)		462 (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-005

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 6/3	70	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations
2-13	2.5Y 2.5/1	95	2.5Y 5/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations
13-17	2.5Y 5/2	80	2.5Y 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

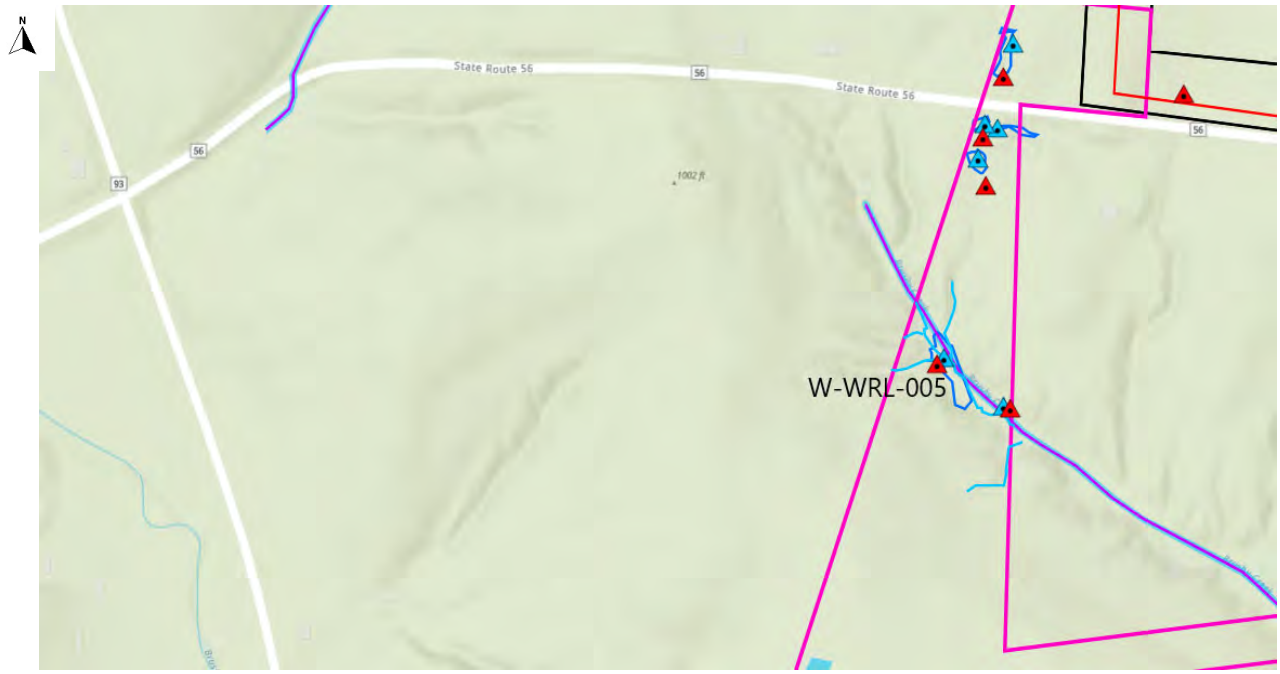
Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric soil indicator present.

Background Information	
Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-005**
Vegetation Communit(ies):	**PFO**
HGM Class(es):	**MINERAL SOIL FLATS**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37745, -82.45245**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-005		
Wetland Size (delineated acres):	0.25	Wetland Size (Estimated total acres):	0.25

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PFO wetland at the confluence of three small streams S-WRL-001, S-WRL-003, and S-WRL-004. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	59	Category:	2

Wetland ID:	W-WRL-005

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-005

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-005

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

Wetland ID:	W-WRL-005

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-005

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-005

Delineated acres:	0.25
Total acres:	0.25

Metric 1. Wetland Area (size).

1.0 / 1.0 (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)
- [ ] 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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

13.0 / 14.0 (max 14 pts. / subtotal)

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

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

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

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] 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)

Metric 3. Hydrology.

24.0 / 38.0 (max 30 pts. / subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [x] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.0 / 49.0 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] 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)
- [x] 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 removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

49.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-005

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-005

49.0
subtotal this page

0.0 max 10 pts. | **49.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

10.0 max 20pts. | **59.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
0	Shrub
0	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
x	Moderately high(4)
	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer 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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

59.0	**TOTAL (Max 100 pts)**
2	**Category**

Wetland ID:	W-WRL-005

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**1**		
	Metric 2. Buffers and surrounding land use	**13**		
	Metric 3. Hydrology	**24**		
	Metric 4. Habitat	**11**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**10**		
	TOTAL SCORE	**59**		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-005

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-005 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing North	

Wetland W-WRL-005 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-005 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing South	

Wetland W-WRL-005 **Date:** September 1, 2022 **Description:** PFO Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-005

Date:

September 1, 2022

Description:

PFO

Category 2

Soil Pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-005-UPL
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15
Subregion (LRR or MLRA): LRR N Lat: 39.37740 Long: -82.45253 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-005, located approximately 10ft south of the wetland boundary. Hydrophytic vegetation indicator present, but lacking hydric soil and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-005-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	15	Yes	FACU
2. *Diospyros virginiana*	25	Yes	FAC
3. *Acer saccharinum*	10	No	FACW
4. *Liriodendron tulipifera*	5	No	FACU
5.			
6.			
7.			
	55	=Total Cover	
50% of total cover: 28	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Diospyros virginiana*	25	Yes	FAC
2. *Carya ovata*	10	Yes	FACU
3. *Lindera benzoin*	10	Yes	FAC
4. *Betula nigra*	2	No	FACW
5.			
6.			
7.			
8.			
9.			
	47	=Total Cover	
50% of total cover: 24	20% of total cover: 10		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum acrostichoides*	30	Yes	FACU
2. *Thelypteris palustris*	25	Yes	FACW
3. *Lindera benzoin*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	=Total Cover	
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30' r)			
1. *Toxicodendron radicans*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3	20% of total cover: 1		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	37	x 2 =	74
FAC species	70	x 3 =	210
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	167 (A)		524 (B)
Prevalence Index = B/A =			3.14

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-005-UPL

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicator present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-006
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 39.37705 Long: -82.45180 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: R4SBC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
A small pocket, PEM wetland on the terrace of stream S-WRL-003. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 6
Water Table Present?	Yes X	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and one secondary wetland hydrology indicator present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-WRL-006

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5' r)			
1. *Sparganium americanum*	40	Yes	OBL
2. *Scirpus atrovirens*	25	Yes	OBL
3. *Scirpus cyperinus*	10	No	FACW
4. *Carex frankii*	10	No	OBL
5. *Panicum dichotomiflorum*	10	No	FACW
6. *Thelypteris palustris*	2	No	FACW
7. *Laportea canadensis*	2	No	FAC
8.			
9.			
10.			
11.			
	99 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	22	x 2 =	44
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	99 (A)		125 (B)

Prevalence Index = B/A = 1.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-006

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 5/2	80	10YR 5/6	20	C	PL	Loamy/Clayey	Prominent redox concentrations
5-17	2.5Y 6/2	90	2.5Y 5/6	10	C	PL	Sandy	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

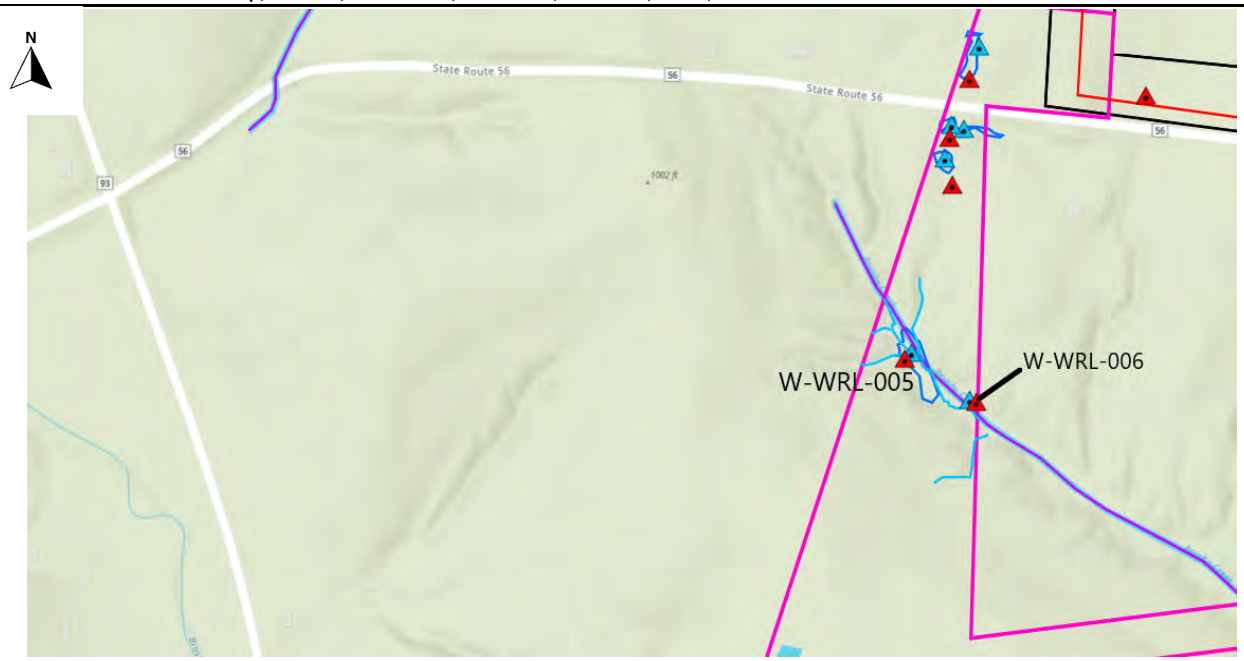
Remarks:

Hydric soil indicators present.

Background Information

Name:	**B. Leopold and C.Wyse**
Date:	**9/1/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-006**
Vegetation Communit(ies):	**PFO**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

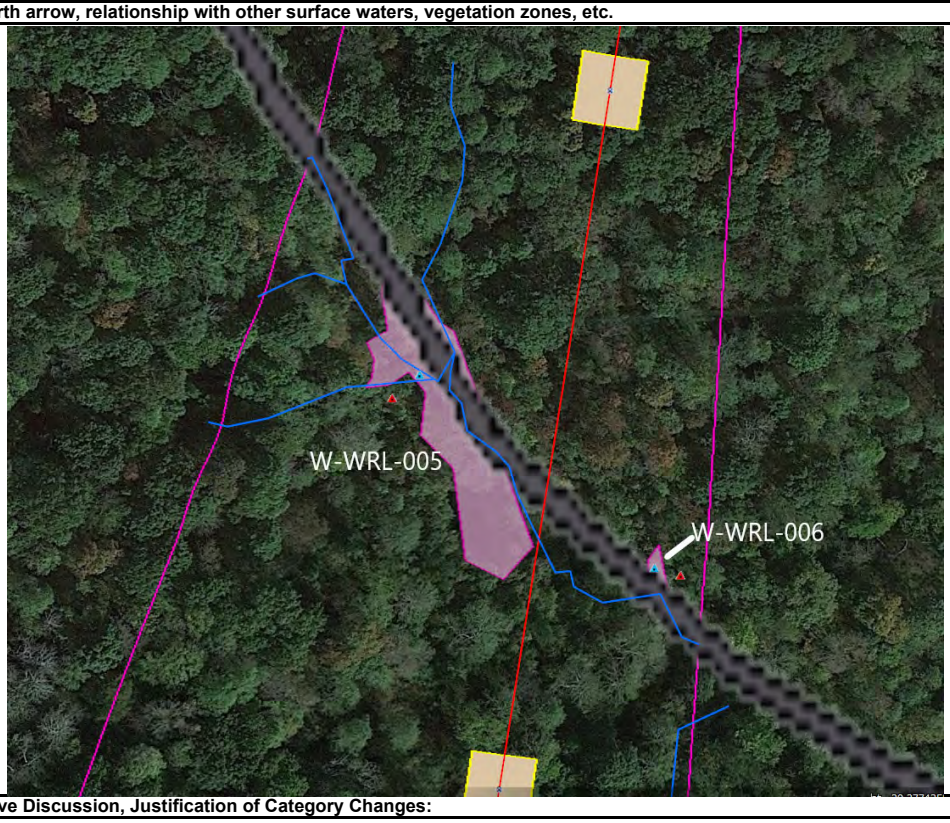


Lat/Long or UTM Coordinate:	**39.37705, -82.45180**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/1/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-006		
Wetland Size (delineated acres):	0.01	Wetland Size (Estimated total acres):	0.01

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N



Comments, Narrative Discussion, Justification of Category Changes:

A small pocket, PEM wetland on the terrace of stream S-WRL-003. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	55	Category:	2

Wetland ID:	W-WRL-006

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-006

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-006

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

Wetland ID:	W-WRL-006

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-006

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-006

Delineated acres:	0.01
Total acres:	0.01

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

12.0 (max 14 pts.) | 12.0 (subtotal)

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

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

Metric 3. Hydrology.

24.0 (max 30 pts.) | 36.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [x] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.0 (max 20 pts.) | 47.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

47.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-006

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/1/2022

Field ID:

W-WRL-006

47.0 subtotal this page

0.0 max 10 pts. **47.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

8.0 max 20pts. **55.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [x] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer 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)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

55.0 **TOTAL (Max 100 pts)**

2 **Category**

Wetland ID:	W-WRL-006

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**0**		
	Metric 2. Buffers and surrounding land use	**12**		
	Metric 3. Hydrology	**24**		
	Metric 4. Habitat	**11**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**8**		
	TOTAL SCORE	**55**		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-006

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-006 **Date:** September 1, 2022 **Description:** PEM Category 2 Facing North	

Wetland W-WRL-006 **Date:** September 1, 2022 **Description:** PEM Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-006 **Date:** September 1, 2022 **Description:** PEM Category 2 Facing South	

Wetland W-WRL-006 **Date:** September 1, 2022 **Description:** PEM Category 2 Facing West	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-006	
Date: September 1, 2022	
Description: PEM Category 2 Soil Pit	

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/1/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-006-UPL
Investigator(s): WRL, CRW Section, Township, Range: S3 T12N R17W
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat: 39.37703 Long: -82.45173 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-006 located between the wetland and stream S-WRL-003. Hydric soil indicator present, but lacking hydrophytic vegetation and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-006-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liriodendron tulipifera*	25	Yes	FACU
2. *Carpinus caroliniana*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rosa multiflora*	55	Yes	FACU
2. *Lindera benzoin*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Herb Stratum (Plot size: 5' r)			
1. *Thelypteris palustris*	25	Yes	FACW
2. *Boehmeria cylindrica*	10	No	FACW
3. *Polystichum acrostichoides*	20	Yes	FACU
4. *Persicaria virginiana*	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	=Total Cover	
50% of total cover: 33		20% of total cover:	13
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	35	x 3 =	105
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	170 (A)		575 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
No hydrophytic vegetation indicator is present.

SOIL

Sampling Point: W-WRL-006-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 4/3	90	2.5Y 5/6	10	C	M	Loamy/Clayey	Distinct redox concentrations
2-10	2.5Y 6/3	70	2.5Y 5/6	30	C	M	Sandy	Distinct redox concentrations
10-16	2.5Y 5/2	60	2.5Y 5/6	40	C	M	Sandy	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- X Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric soil indicator present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-007-PSS
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): LRR N Lat: 39.37478 Long: -82.45378 Datum: WGS84
Soil Map Unit Name: Bhv1B: Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PSS wetland surrounding PUB portion of wetland. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 36
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and one secondary wetland hydrology indicator present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-007-PSS

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Salix nigra*	50	Yes	OBL
2. *Acer rubrum*	3	No	FAC
3. *Rosa multiflora*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	56	=Total Cover	
50% of total cover: 28		20% of total cover:	12
Herb Stratum (Plot size: 5' r)			
1. *Scirpus cyperinus*	50	Yes	FACW
2. *Conoclinium coelestinum*	20	Yes	FAC
3. *Typha latifolia*	5	No	OBL
4. *Bidens frondosa*	5	No	FACW
5. *Panicum dichotomiflorum*	10	No	FACW
6. *Euthamia graminifolia*	5	No	FAC
7. *Onoclea sensibilis*	5	No	FACW
8.			
9.			
10.			
11.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Woody Vine Stratum (Plot size: 30' r)			
1. *Lonicera japonica*	3	No	FACU
2.			
3.			
4.			
5.			
	3	=Total Cover	
50% of total cover: 2		20% of total cover:	1

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	70	x 2 =	140
FAC species	28	x 3 =	84
FACU species	6	x 4 =	24
UPL species	0	x 5 =	0
Column Totals:	169 (A)		313 (B)
Prevalence Index = B/A =			1.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators are present.

SOIL

Sampling Point: W-WRL-007-PSS

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 5/2	100					Loamy/Clayey	
2-13	2.5Y 5/2	70	2.5Y 5/6	20	C	PL	Loamy/Clayey	Prominent redox concentrations
			10YR 5/8	10	C	PL		Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric soil indicator present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-007-PUB
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat: 39.37490 Long: -82.45378 Datum: WGS84
Soil Map Unit Name: Bhv1B: Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PUB/ open water portion of weltand W-WRL-007. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- X True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 36
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-007-PUB

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5' r)			
1. *Brasenia schreberi*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 =Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	60 (A)		60 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-007-PUB

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- _X_ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _X_ **No** ____

Remarks:

No soil pit dug. Hydric by definition 3.B.; hydric soil indicator present.

Background Information

Name:	**B. Leopold and C.Wyse**
Date:	**9/2/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-007**
Vegetation Communit(ies):	**PSS/PUB**
HGM Class(es):	**DEPRESSION**

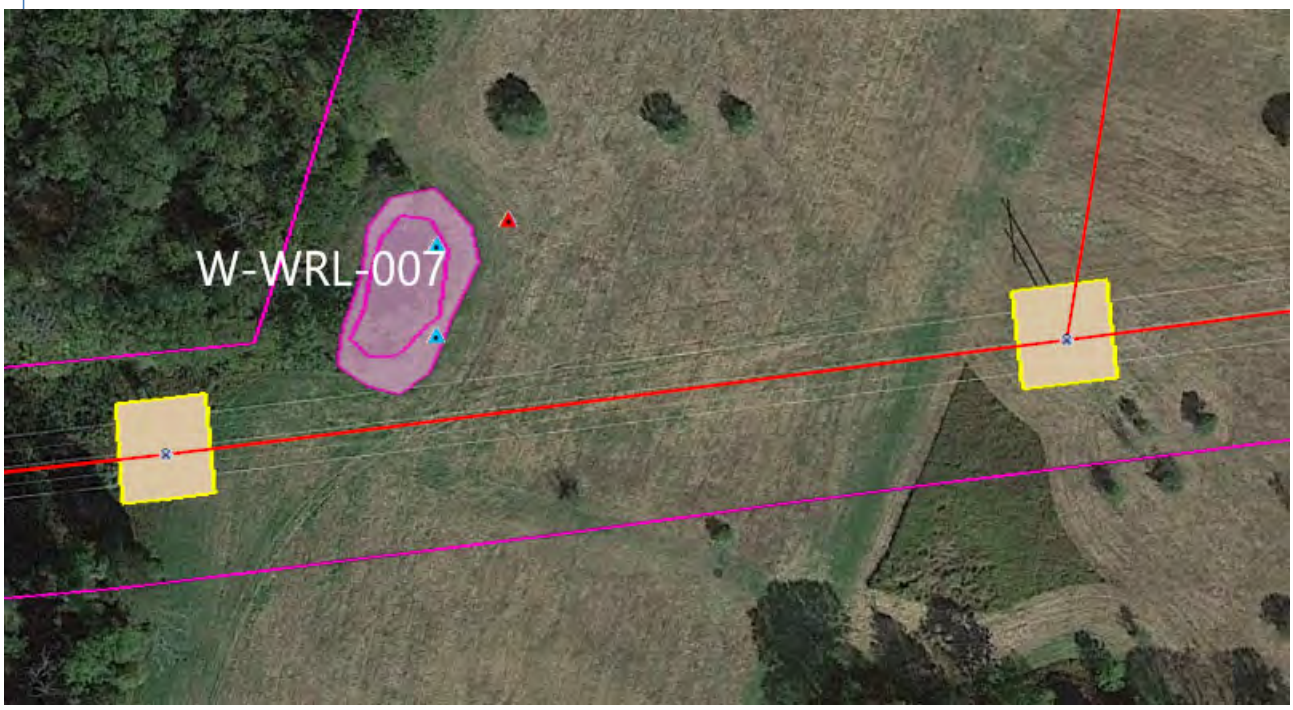
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Lat/Long or UTM Coordinate:	**39.37478, -82.45378**
USGS Quad Name:	**Zaleski**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/2/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-007		
Wetland Size (delineated acres):	0.11	Wetland Size (Estimated total acres):	0.11

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N



Comments, Narrative Discussion, Justification of Category Changes:

PSS wetland surrounding PUB portion of wetland. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.
PUB/ open water portion of weltand W-WRL-007. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.
Soil map unit indicated 'reclaimed' soils.

Final score:	57	Category:	2

Wetland ID:	W-WRL-007

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-007

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-007

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

Wetland ID:	W-WRL-007

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-007

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-007

Delineated acres:	0.11
Total acres:	0.11

Metric 1. Wetland Area (size).

1.0 (max 6 pts) | 1.0 (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)
- [ ] 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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

6.0 (max 14 pts.) | 7.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

21.0 (max 30 pts.) | 28.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [x] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

18.0 (max 20 pts.) | 46.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [x] 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.

- [x] 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 removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

46.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-007

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-007

46.0
subtotal this page

0.0 max 10 pts. **46.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

11.0 max 20pts. **57.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

0	Aquatic bed
0	Emergent
2	Shrub
	Forest
	Mudflats
0	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
x	Moderately high(4)
	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
3	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

57.0 **TOTAL (Max 100 pts)**

2 **Category**

Wetland ID:	W-WRL-007

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	6		
	Metric 3. Hydrology	21		
	Metric 4. Habitat	18		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	11		
	TOTAL SCORE	57		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-007

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PSS Category 2 Facing North	

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PSS Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PSS Category 2 Facing South	

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PSS Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-007

Date:

September 2, 2022

Description:

PSS

Category 2

Soil Pit

Wetland W-WRL-007

Date:

September 2, 2022

Description:

PUB

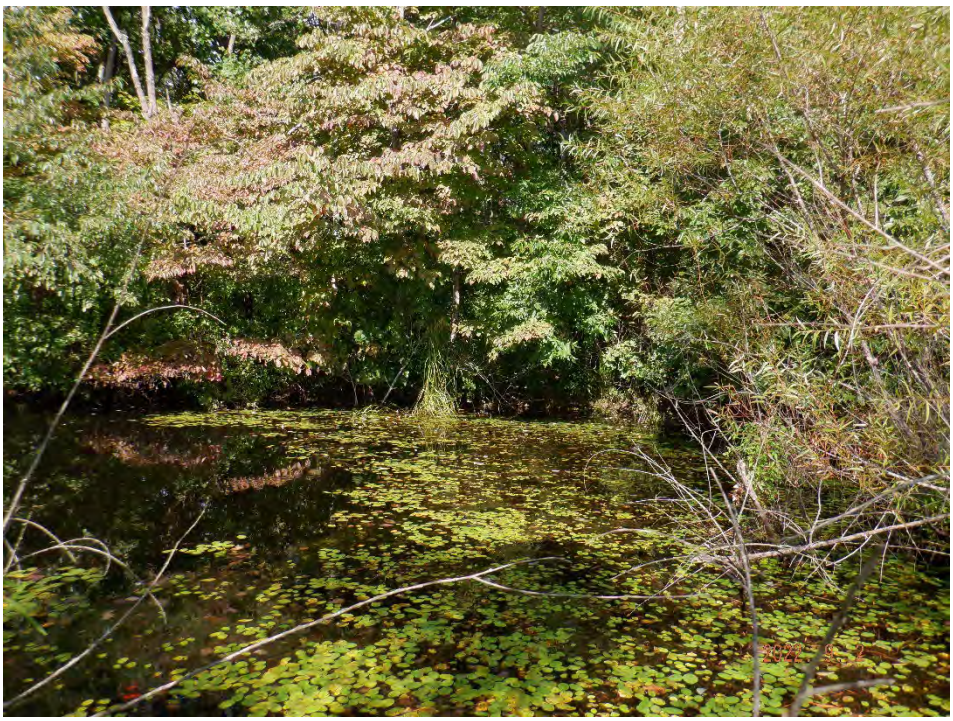
Category 2

Facing North

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing South	

Wetland W-WRL-007 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing West	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-007

Date:

September 2, 2022

Description:

PUB

Category 2

Soils

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-007-UPL
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): None Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat: 39.37494 Long: -82.45365 Datum: WGS84
Soil Map Unit Name: Bhv1B: Bethesda silt loam, 0 to 8 percent slopes, reclaimed NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-007 taken in old field habitat across from mowed path that surrounds the wetland. Hydrophytic vegetation indicator present, but lacking hydric soil and wetland hydrology indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-007-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5')			
1. *Phleum pratense*	30	Yes	FACU
2. *Festuca rubra*	15	Yes	FACU
3. *Vernonia gigantea*	15	Yes	FAC
4. *Panicum dichotomiflorum*	20	Yes	FACW
5. *Desmodium canadense*	15	Yes	FAC
6. *Asclepias verticillata*	5	No	FACU
7. *Agrimonia parviflora*	3	No	FACW
8.			
9.			
10.			
11.			
	103 =Total Cover		
50% of total cover: 52	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	23	x 2 =	46
FAC species	30	x 3 =	90
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	103 (A)		336 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-007-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Loamy/Clayey	
6-10	10YR 4/4	100					Loamy/Clayey	
10-16	10YR 5/6	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicator present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-008
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat: 39.37559 Long: -82.44450 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PEM wetland- a depression on a hillside within ROW. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and one secondary wetland hydrology indicator present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-008

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2 =Total Cover		
50% of total cover: 1	20% of total cover:	1	
Herb Stratum (Plot size: 5' r)			
1. *Persicaria pensylvanica*	30	Yes	FACW
2. *Persicaria amphibia*	15	No	OBL
3. *Scirpus cyperinus*	10	No	FACW
4. *Echinochloa muricata*	20	Yes	FACW
5. *Dichanthelium clandestinum*	20	Yes	FAC
6. *Apocynum cannabinum*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover:	20	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	60	x 2 =	120
FAC species	22	x 3 =	66
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	102 (A)		221 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-008

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/4	100					Sandy	
6-8	7.5YR 2.5/2	100					Loamy/Clayey	
8-14	7.5YR 5/2	70	7.5YR 6/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

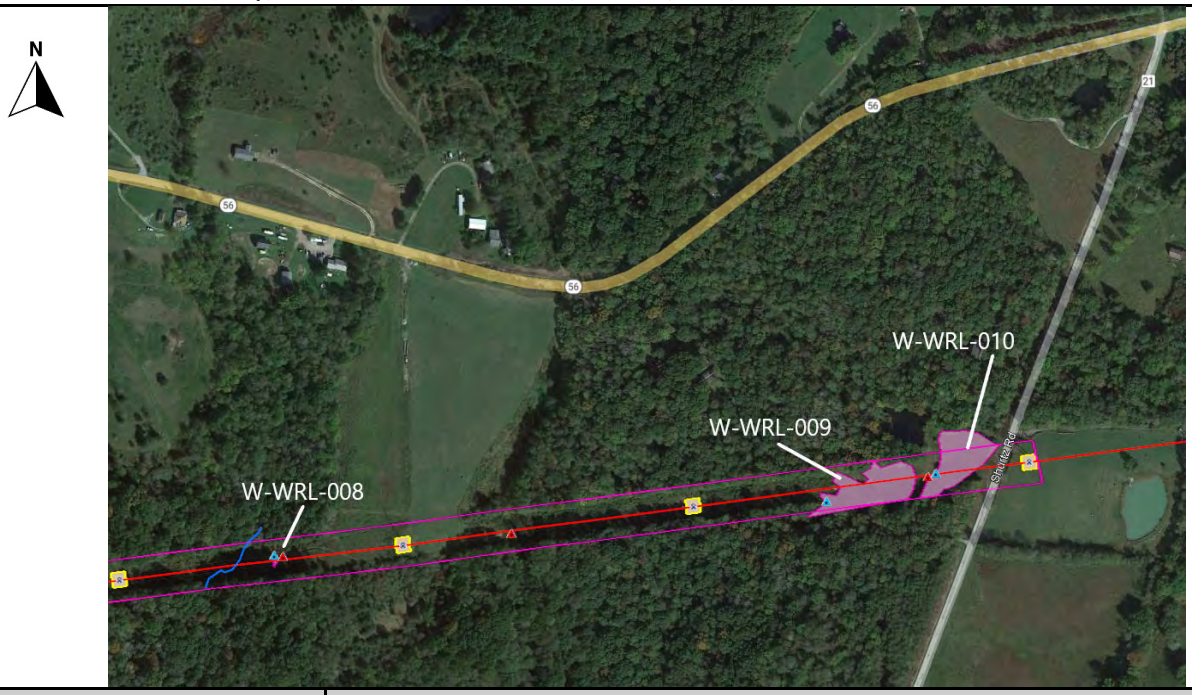
Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric soil indicator present.

Background Information	
Name:	**B. Leopold and C.Wyse**
Date:	**9/2/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-008**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

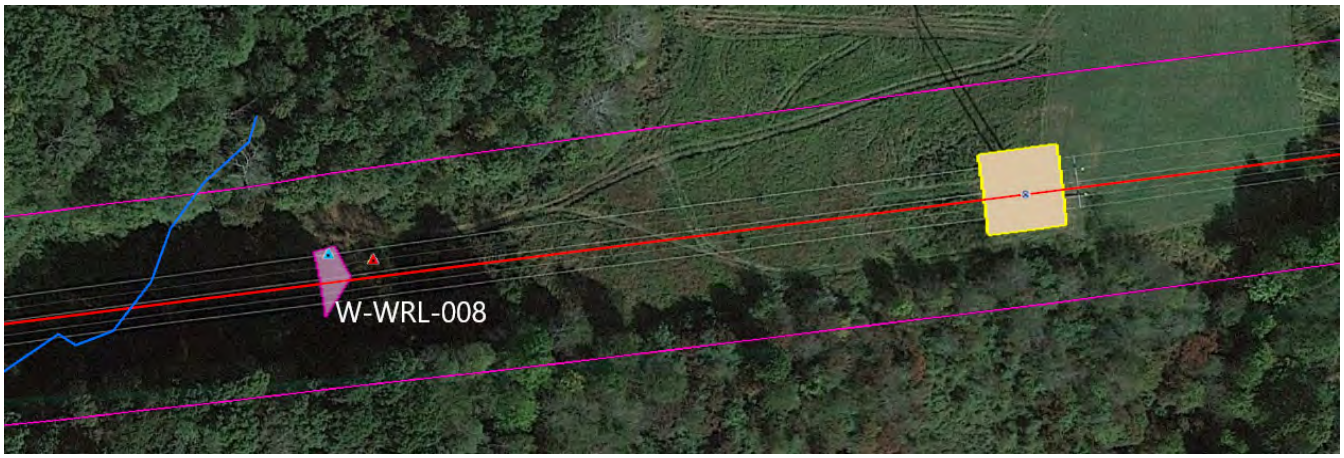


Lat/Long or UTM Coordinate:	**39.37559, -82.44450**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/2/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-008		
Wetland Size (delineated acres):	0.01	Wetland Size (Estimated total acres):	0.01

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N



Comments, Narrative Discussion, Justification of Category Changes:

PEM wetland- a depression on a hillside within ROW. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	34	Category:	1 or 2 Gray Zone

Wetland ID:	W-WRL-008

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-008

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-008

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

Wetland ID:	W-WRL-008

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-008

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-008

Delineated acres:	0.01
Total acres:	0.01

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)
- [ ] 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

8.0 (max 14 pts.) | 8.0 (subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

12.0 (max 30 pts.) | 20.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

8.0 (max 20 pts.) | 28.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] 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)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

28.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-008

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:
W-WRL-008

28.0
subtotal this page

0.0 max 10 pts. | **28.0** 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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6.0 max 20pts. | **34.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

0	Aquatic bed
2	Emergent
0	Shrub
	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
x	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer

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)
x	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
2	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

34.0	**TOTAL (Max 100 pts)**
1 or 2 Gray Zone	**Category**

Wetland ID:	W-WRL-008

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	8		
	Metric 3. Hydrology	12		
	Metric 4. Habitat	8		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	6		
	TOTAL SCORE	34		Category based on score breakpoints 1 or 2 Gray Zone

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-008

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-008 **Date:** September 2, 2022 **Description:** PEM Category 2 Facing North	

Wetland W-WRL-008 **Date:** September 2, 2022 **Description:** PEM Category 2 Facing East	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-008 **Date:** September 2, 2022 **Description:** PEM Category 2 Facing South	

Wetland W-WRL-008 **Date:** September 2, 2022 **Description:** PEM Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-008

Date:

September 2, 2022

Description:

PEM

Category 2

Soil Pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-008-UPL
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15
Subregion (LRR or MLRA): LRR N Lat: 39.37559 Long: -82.44439 Datum: WGS84
Soil Map Unit Name: WhL1D1: Wharton-Latham silt loams, 15 to 25 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetland W-WRL-008 taken 10ft east of wetland boundary. Lacking any wetland indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-008-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rubus occidentalis*	10	Yes	UPL
2. *Magnolia acuminata*	3	Yes	FACU
3. *Liriodendron tulipifera*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	14 =Total Cover		
50% of total cover: 7	20% of total cover:	3	
Herb Stratum (Plot size: 5' r)			
1. *Dichanthelium clandestinum*	25	Yes	FAC
2. *Thelypteris palustris*	25	Yes	FACW
3. *Onoclea sensibilis*	10	No	FACW
4. *Lespedeza cuneata*	15	Yes	FACU
5. *Desmodium canadense*	10	No	FAC
6. *Panicum dichotomiflorum*	10	No	FACW
7. *Agrimonia parviflora*	5	No	FACW
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover:	20	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	35	x 3 =	105
FACU species	19	x 4 =	76
UPL species	10	x 5 =	50
Column Totals:	114 (A)		331 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
No hydrophytic vegetaion indicator present.

SOIL

Sampling Point: W-WRL-008-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100					Loamy/Clayey	
8-17	7.5YR 5/3	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-009
Investigator(s): WRL, CRW Section, Township, Range: S2 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10
Subregion (LRR or MLRA): LRR N Lat: 39.37607 Long: -82.43777 Datum: WGS84
Soil Map Unit Name: Omu1C1: Omulga silt loam, 6 to 12 percent slopes NWI classification: PUBGx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PUB wetland- large pond within ROW. The wetland extends to the south, outside the study area. Precipitation has been higher than average within the past 90 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 36
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and secondary wetland hydrology indicators present. Surface water >36 inches deep.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-009

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5' r)			
1. *Leersia virginica*	5	Yes	FACW
2. *Juncus effusus*	5	Yes	FACW
3. *Lycopus americanus*	5	Yes	OBL
4. *Persicaria amphibia*	5	Yes	OBL
5. *Thelypteris palustris*	5	Yes	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	25 =Total Cover		
50% of total cover: 13	20% of total cover:	5	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	25 (A)		40 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-009

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

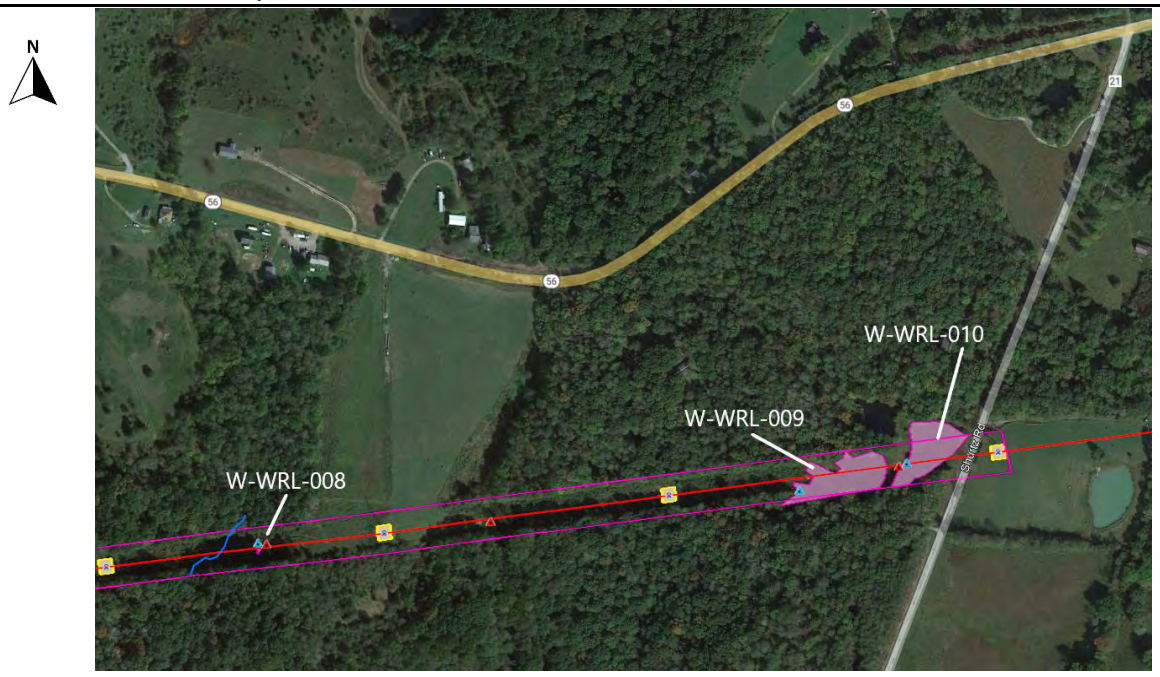
Hydric Soil Present? **Yes** X **No** ____

Remarks:

Hydric soils by definition 3.B

Background Information	
Name:	**B. Leopold and C.Wyse**
Date:	**9/2/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-009**
Vegetation Communit(ies):	**PUB**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37607, -82.43777**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/2/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-009		
Wetland Size (delineated acres):	0.81	Wetland Size (Estimated total acres):	0.81

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PUB wetland- large pond within ROW. The wetland extends to the south, outside the study area. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	55	Category:	2

Wetland ID:	W-WRL-009

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-009

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-009

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

Wetland ID:	W-WRL-009

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-009

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-009

Delineated acres:	0.81
Total acres:	0.81

Metric 1. Wetland Area (size).

2.0 / 2.0 (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)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

13.0 / 15.0 (max 14 pts. / subtotal)

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

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

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

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] 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)

Metric 3. Hydrology.

21.0 / 36.0 (max 30 pts. / subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [x] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [x] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

12.0 / 48.0 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [x] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [ ] farming
- [ ] nutrient enrichment

48.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-009

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:
W-WRL-009

48.0
subtotal this page

0.0 max 10 pts. | **48.0** 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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

7.0 max 20pts. | **55.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

0	Aquatic bed
0	Emergent
	Shrub
	Forest
	Mudflats
2	Open water
	Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
x	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer 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)
x	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
2	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

55.0 **TOTAL (Max 100 pts)**
2 **Category**

Wetland ID:	W-WRL-009

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	13		
	Metric 3. Hydrology	21		
	Metric 4. Habitat	12		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	7		
	TOTAL SCORE	55		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-009

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-009	
Date: September 2, 2022 **Description:** PUB Category 2 Facing North	

Wetland W-WRL-009	
Date: September 2, 2022 **Description:** PUB Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-009 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing South	

Wetland W-WRL-009 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing West	

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-009

Date:

September 2, 2022

Description:

PUB

Category 2

Soils

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-009/010-UPL
Investigator(s): WRL, CRW Section, Township, Range: S2 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat: 39.37630 Long: -82.43651 Datum: WGS84
Soil Map Unit Name: Omu1C1: Omulga silt loam, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point associated with wetlands W-WRL-009 and W-WRL-010. Point taken between the two ponds within the ROW. Lacking wetland indicators. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
No wetland hydrology indicator present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-WRL-009/010-UPL

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	2	Yes	FAC
2. *Liriodendron tulipifera*	2	Yes	FACU
3. *Rosa multiflora*	1	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover:	1	
Herb Stratum (Plot size: 5' r)			
1. *Andropogon virginicus*	60	Yes	FACU
2. *Cyperus strigosus*	10	No	FACW
3. *Symphyotrichum ericoides*	15	No	FACU
4. *Juncus effusus*	5	No	FACW
5. *Tridens flavus*	10	No	FACU
6. *Solidago canadensis*	5	No	FACU
7. *Apocynum cannabinum*	5	No	FACU
8. *Lespedeza bicolor*	5	No	UPL
9.			
10.			
11.			
	115 =Total Cover		
50% of total cover: 58	20% of total cover:	23	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	2	x 3 =	6
FACU species	98	x 4 =	392
UPL species	5	x 5 =	25
Column Totals:	120 (A)		453 (B)
Prevalence Index = B/A =			3.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
No hydrophytic vegetation indicator present.

SOIL

Sampling Point: W-WRL-009/010-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 2.5/3	100					Loamy/Clayey	
1-11	10YR 5/3	70	10YR 3/6	20	C	M	Loamy/Clayey	Distinct redox concentrations
			10YR 6/2	10	D	M		
11-16	10YR 4/2	70	10YR 5/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: W-WRL-010
Investigator(s): WRL, CRW Section, Township, Range: S2 T12N R17W
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 39.37633 Long: -82.43641 Datum: WGS84
Soil Map Unit Name: Omu1C1: Omulga silt loam, 6 to 12 percent slopes NWI classification: PUBGx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PUB wetland- large excavated pond within ROW, downslope of wetland W-WRL-009. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 36
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Multiple primary and one secondary wetland hydrology indicator present. Surface water >36 inches deep.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-WRL-010

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	1	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	1 =Total Cover		
50% of total cover: 1	20% of total cover:	1	
Herb Stratum (Plot size: 5' r)			
1. *Leersia oryzoides*	10	Yes	OBL
2. *Sparganium americanum*	10	Yes	OBL
3. *Juncus effusus*	5	No	FACW
4. *Typha latifolia*	5	No	OBL
5. *Eupatorium perfoliatum*	2	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	32 =Total Cover		
50% of total cover: 16	20% of total cover:	7	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	7	x 2 =	14
FAC species	1	x 3 =	3
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	33 (A)		42 (B)

Prevalence Index = B/A = 1.27

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators present.

SOIL

Sampling Point: W-WRL-010

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

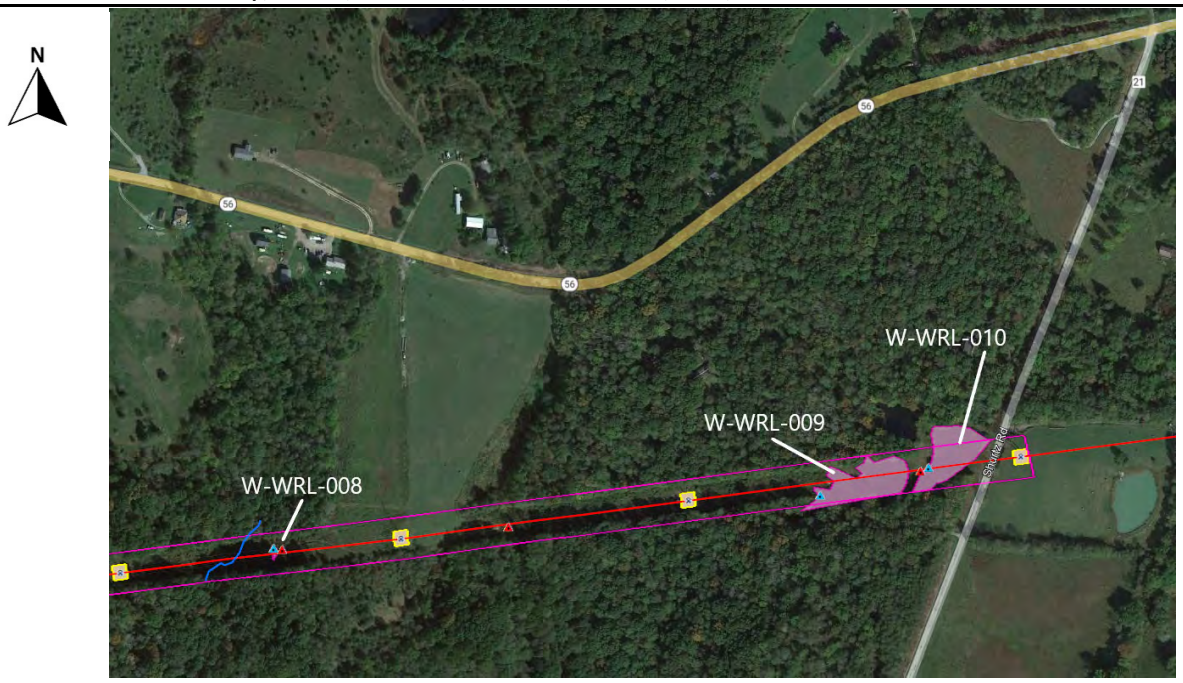
Hydric Soil Present? **Yes** X **No** ____

Remarks:

Hydric soils by definition 3.B

Background Information	
Name:	**B. Leopold and C.Wyse**
Date:	**9/2/2022**
Affiliation:	**AECOM**
Address:	**525 Vine St., Ste. 1800, Cincinnati, OH 45202**
Phone Number:	**859-640-5603**
e-mail address:	Bill.Leopold@aecom.com
Name of Wetland:	**W-WRL-010**
Vegetation Communit(ies):	**PUB**
HGM Class(es):	**DEPRESSION**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**39.37633, -82.43641**
USGS Quad Name:	**New Plymouth**
County:	**Vinton**
Township:	**Swan**
Section and Subsection:	**S3 T12N R17W**
Hydrologic Unit Code:	**Brushy Fork (HUC: 050901010203)**
Site Visit:	**9/2/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-WRL-010		
Wetland Size (delineated acres):	0.71	Wetland Size (Estimated total acres):	0.71

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

PUB wetland- large excavated pond within ROW, downslope of wetland W-WRL-009. Precipitation has been higher than average within the past 30 days. Wetland hydrology indicators, hydrophytic vegetation indicator, and hydric soil indicator present.

Final score:	54	Category:	2

Wetland ID:	W-WRL-010

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
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.	X	

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

Wetland ID:	W-WRL-010

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 *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , 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 *Sphagnum* 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

Wetland ID:	W-WRL-010

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

Wetland ID:	W-WRL-010

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-WRL-010

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-010

Delineated acres:	0.71
Total acres:	0.71

Metric 1. Wetland Area (size).

1.0 / 1.0 (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)
- [ ] 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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

6.0 / 7.0 (max 14 pts. / subtotal)

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

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

Metric 3. Hydrology.

23.0 / 30.0 (max 30 pts. / subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [x] Other groundwater (3)
- [x] 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)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [x] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

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

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

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

16.0 / 46.0 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] 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 removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

46.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-WRL-010

Site:	AEP Ilesboro 138 kV Project	Rater(s):	B. Leopold and C.Wyse	Date:	9/2/2022

Field ID:

W-WRL-010

46.0
subtotal this page

0.0 max 10 pts. | **46.0** 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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

8.0 max 20pts. | **54.0** 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
- [2] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer 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)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [2] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

54.0 **TOTAL (Max 100 pts)**

2 **Category**

Wetland ID:	W-WRL-010

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**1**		
	Metric 2. Buffers and surrounding land use	**6**		
	Metric 3. Hydrology	**23**		
	Metric 4. Habitat	**16**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**8**		
	TOTAL SCORE	**54**		Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland ID:	W-WRL-010

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-010 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing North	

Wetland W-WRL-010 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing East	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-010 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing South	

Wetland W-WRL-010 **Date:** September 2, 2022 **Description:** PUB Category 2 Facing West	

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Wetland W-WRL-010

Date:

September 2, 2022

Description:

PUB

Category 2

Soils

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: AEP Ilesboro 138 kV Project City/County: Vinton Sampling Date: 9/2/22
Applicant/Owner: AEP State: OH Sampling Point: UPL-WRL-001
Investigator(s): WRL, CRW Section, Township, Range: S10 T12N R17W
Landform (hillside, terrace, etc.): Shoulder Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 39.37579 Long: -82.44162 Datum: WGS84
Soil Map Unit Name: Bhs4D: Bethesda channery silt loam, 8 to 25 percent slopes, unreclaimed NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point taken at where prior mapped potential wetland area. Point taken to investigate for wetland conditions. Wetland is located to the south, outside the ROW, but wetland hydrology and hydric soil indicators are not present within the ROW at this location. Precipitation has been higher than average within the past 30 days.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
One secondary wetland hydrology indicator is present.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: UPL-WRL-001

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rubus occidentalis*	5	Yes	UPL
2. *Liriodendron tulipifera*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 =Total Cover		
50% of total cover: 5	20% of total cover:	2	
Herb Stratum (Plot size: 5' r)			
1. *Agrostis gigantea*	40	Yes	FACW
2. *Juncus effusus*	20	Yes	FACW
3. *Dichanthelium dichotomum*	20	Yes	FAC
4. *Dichanthelium clandestinum*	20	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover:	20	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	40	x 3 =	120
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	110 (A)		285 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicator present.

SOIL

Sampling Point: UPL-WRL-001

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	7.5YR 3/3	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Distinct redox concentrations
11-16	7.5YR 4/6	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicator present.

APPENDIX C

Project Stream Table

9/27/2022

FIDDLESTIX SWITCH-ILESBORO SOUTH CENTRAL POWER 138 KV T-LINE PROJECT-ADDENDUM 2
STREAM TABLE

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing	Proposed Impacts	
	Latitude	Longitude						Method	Score	Category / Rating / OAC Designation			Fill Type	Length (LF)
S-WRL-001	39.37777	-82.45237	Intermittent	UNT to Brushy Creek	228	3.8	2.3	HHEI	36	Class II PHW	Eligible	TBD	None	N/A
S-WRL-002	39.37765	-82.45277	Ephemeral	UNT to Brushy Creek	73	1.2	1.1	HHEI	23	Class I PHW	Eligible	TBD	None	N/A
S-WRL-003	39.37735	-82.45232	Perennial	Brushy Creek	590	4.5	3.5	HHEI	60	Class III PHW	Eligible	TBD	None	N/A
S-WRL-004	39.37740	-82.45272	Intermittent	UNT to Brushy Creek	180	3.9	2.8	HHEI	43	Class II PHW	Eligible	TBD	None	N/A
S-WRL-005	39.37642	-82.45178	Intermittent	UNT to Brushy Creek	284	3.8	3.5	HHEI	35	Class II PHW	Eligible	TBD	None	N/A
S-WRL-006	39.37455	-82.45599	Ephemeral	UNT to Brushy Fork	254	2.7	1.5	HHEI	18	Class I PHW	Eligible	TBD	None	N/A
S-WRL-007	39.37468	-82.45592	Intermittent	UNT to Brushy Fork	184	5.2	4	HHEI	56	Class III PHW	Eligible	TBD	None	N/A
S-WRL-008	39.37512	-82.44843	Perennial	Brushy Creek	220	8.3	7.2	HHEI	71	Class III PHW	Eligible	TBD	None	N/A
S-WRL-009	39.37515	-82.44740	Intermittent	UNT to Brushy Creek	56	2.4	2	HHEI	41	Class II PHW	Eligible	TBD	None	N/A
S-WRL-010	39.37549	-82.44501	Intermittent	UNT to Brushy Creek	307	4.7	4.1	HHEI	60	Class II PHW	Eligible	TBD	None	N/A
				Total:	**2,376**									**0**

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

APPENDIX D

OEPA Stream Data Forms

Delineated Features Photographs

(combined per wetland and shown in numerical order)

Upland Drainage Feature Photographs

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3): 36

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-001 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37777 LONG: -82.45237 RIVER MILE: 0.01

DATE: 9/01/2022 SCORER: WRL, CRW COMMENTS: Intermittent stream; Acid mine runoff present, iron oxide precipitate

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pts]	2%	☐	FINE DETRITUS [3 pts]	8%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	25%	☐	ARTIFICIAL [3 pts]	0%

Substrate Percentage Check: 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 7.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 7

HHEI Metric Points — Substrate Max = 40: 16 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 3.00

Pool Depth Max = 30: 5

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

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

COMMENTS: 3.8' wide AVERAGE BANKFULL WIDTH (meters): 1.20

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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:

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

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Brushy Creek Distance from Evaluated Stream 0.01

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 2650 - 2652

Elevated Turbidity?(Y/N): Y Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures:Temp (°C) 20.9 Dissolved Oxygen (mg/l) N/A pH (S.U.) 4.8 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: lowpit, acid mine drainage, iron oxide present

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

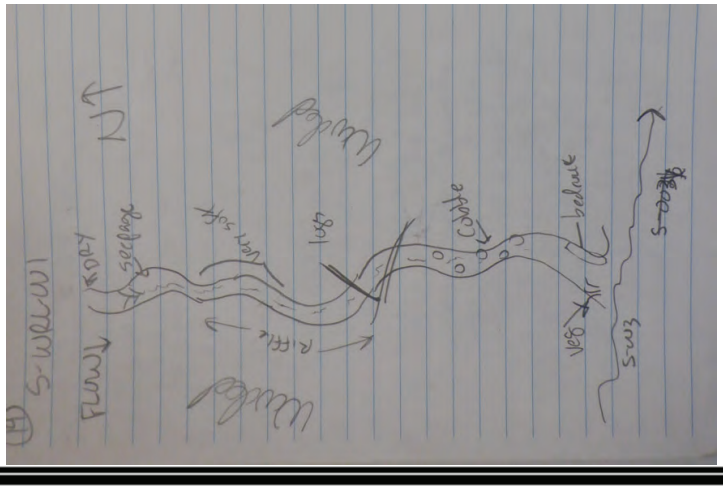
Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Ephemeroptera

Comments Regarding Biology: one Ephemeroptera observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-001

Date:

September 1, 2022

Description:

Intermittent

Class II PHW

Facing Upstream

Stream S-WRL-001

Date:

September 1, 2022

Description:

Intermittent

Class II PHW

Facing Downstream

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-001

Date:

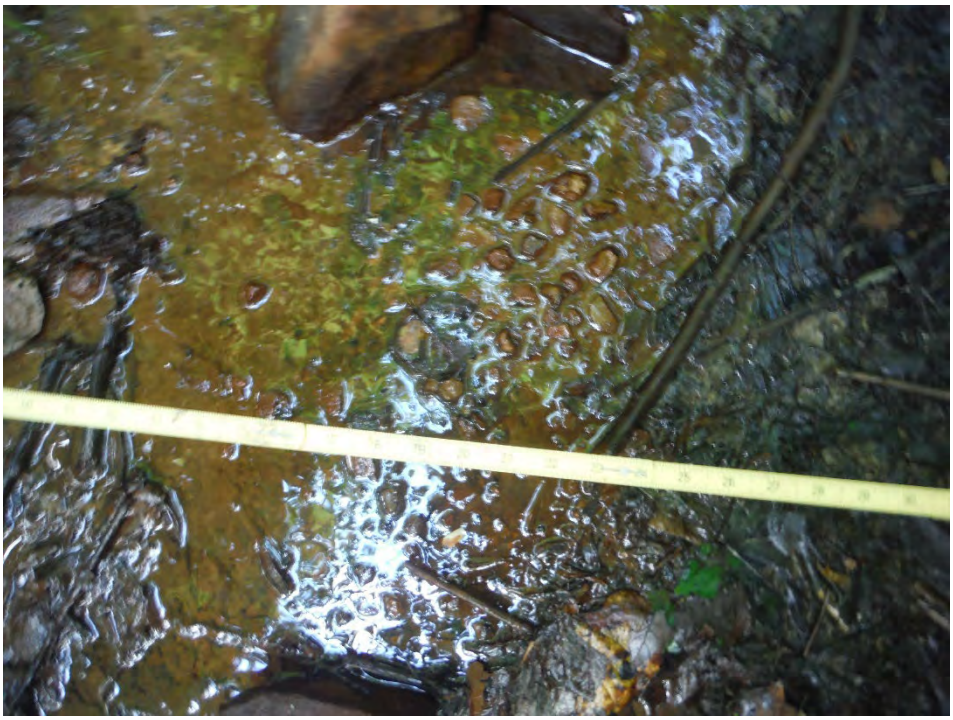
September 1, 2022

Description:

Intermittent

Class II PHW

Substrate



Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3): 23

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-002 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 73 LAT: 39.37765 LONG: -82.45277 RIVER MILE: 0.01

DATE: 09/01/2022 SCORER: WRL, CRW COMMENTS: Ephemeral stream, flowing north to south

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	70%	☐	ARTIFICIAL [3 pts]	0%

Substrate Percentage Check: 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points

Substrate Max = 40: **13**

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: 3cm MAXIMUM POOL DEPTH (centimeters): 3.00

Pool Depth Max = 30: **5**

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

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

COMMENTS: BF = 1.2' w x 0.5' d AVERAGE BANKFULL WIDTH (meters): 0.40

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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: recent heavy rains contributing to flow

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

☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☑ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Brushy Creek** Distance from Evaluated Stream 0.01

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5476 - 5478

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 19.9 Dissolved Oxygen (mg/l) N/A pH (S.U.) 6.4 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

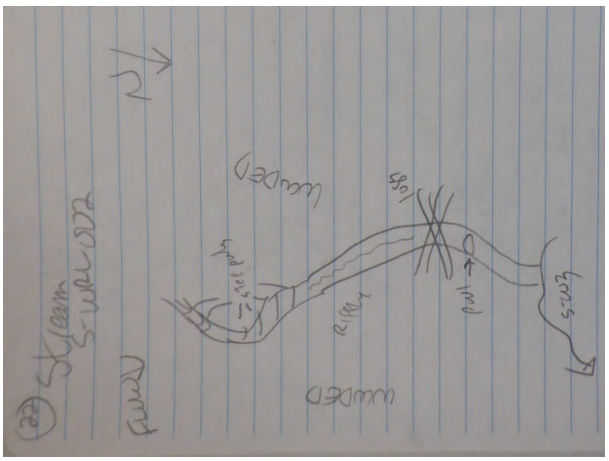
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): N/A

Comments Regarding Biology: None observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-002 **Date:** September 1, 2022 **Description:** Ephemeral Class I PHW Facing Upstream	

Stream S-WRL-002 **Date:** September 1, 2022 **Description:** Ephemeral Class I PHW Facing Downstream	

AECOM	PHOTOGRAPHIC RECORD STREAMS	
Client Name: AEP	**Site Location:** Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	**Project No.** 60624128

Stream S-WRL-002	
Date: September 1, 2022	
Description: Ephemeral Class I PHW Substrate	

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **60**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project/ Brushy Creek

SITE NUMBER: S-WRL-003 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.07

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37735 LONG: -82.45232 RIVER MILE: 2.2

DATE: 9/1/2022 SCORER: WRL, CRW COMMENTS: NHD mapped stream (Brushy Creek)

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	20%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00%

Substrate Percentage Check: 100%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 5

HHEI Metric Points

Substrate Max = 40: **20**

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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 [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 12.00

Pool Depth Max = 30: **25**

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: 4.5 feet AVERAGE BANKFULL WIDTH (meters): 1.40

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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:

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

☐ None	☐ 1.0	☑ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Racoon Creek (LRW)** Distance from Evaluated Stream 4.8

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 2653 - 2662

Elevated Turbidity? (Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 19.9 Dissolved Oxygen (mg/l) N/A pH (S.U.) 6.9 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

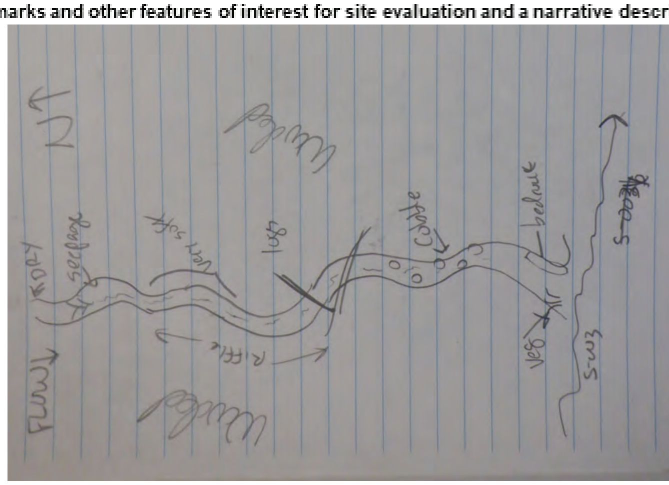
Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): N/A

Comments Regarding Biology: Water oarsmen, water striders

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-003 **Date:** September 1, 2022 **Description:** Perennial Class III PHW Facing Upstream	

Stream S-WRL-003 **Date:** September 1, 2022 **Description:** Perennial Class III PHW Facing Substrate	

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-003

Date:

September 1, 2022

Description:

Perennial

Class III PHW

Facing Downstream

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3): 43

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-004 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 180 LAT: 39.37740 LONG: -82.45272 RIVER MILE: 0.01

DATE: 9/1/2022 SCORER: WRL, CRW COMMENTS: Flowing north into S-WRL-003 (Brushy Fork)

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: [✓] NONE / NATURAL CHANNEL [ ] RECOVERED [ ] RECOVERING [ ] RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
[ ]	BLDR SLABS [16 pts]	0%	[✓]	SILT [3 pt]	20%
[ ]	BOULDER (>256 mm) [16 pts]	0%	[ ]	LEAF PACK/WOODY DEBRIS [3 pts]	5%
[ ]	BEDROCK [16 pts]	0%	[ ]	FINE DETRITUS [3 pts]	0%
[ ]	COBBLE (65-256 mm) [12 pts]	0%	[ ]	CLAY or HARDPAN [0 pt]	0%
[ ]	GRAVEL (2-64 mm) [9 pts]	5%	[ ]	MUCK [0 pts]	0%
[✓]	SAND (<2 mm) [6 pts]	70%	[ ]	ARTIFICIAL [3 pts]	0%

Substrate Percentage Check: 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	[✓]	5 cm - 10 cm [15 pts]
[ ]	> 22.5 - 30 cm [30 pts]	[ ]	< 5 cm [5pts]
[ ]	> 10 - 22.5 cm [25 pts]	[ ]	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 6.00

Pool Depth Max = 30: 15

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

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

COMMENTS: 3.9 feet AVERAGE BANKFULL WIDTH (meters): 1.20

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 (Per Bank)

L	R	
[✓]	[✓]	Wide >10m
[ ]	[ ]	Moderate 5-10m
[ ]	[ ]	Narrow <5m
[ ]	[ ]	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
[ ]	[ ]	Mature Forest, Wetland	[ ]	[ ]	Conservation Tillage
[✓]	[✓]	Immature Forest, Shrub or Old Field	[ ]	[ ]	Urban or Industrial
[ ]	[ ]	Residential, Park, New Field	[ ]	[ ]	Open Pasture, Row Crop
[ ]	[ ]	Fenced Pasture	[ ]	[ ]	Mining or Construction

COMMENTS:

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:

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

[ ] None	[ ] 1.0	[✓] 2.0	[ ] 3.0
[ ] 0.5	[ ] 1.5	[ ] 2.5	[ ] >3

STREAM GRADIENT ESTIMATE

[ ] Flat (0.5 ft/100 ft) [ ] Flat to Moderate [✓] Moderate (2 ft/100 ft) [ ] Moderate to Severe [ ] Severe (10 ft/100 ft)

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Brushy Creek Distance from Evaluated Stream 0.01

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 2656 - 2658

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 19.5 Dissolved Oxygen (mg/l) N/A pH (S.U.) 6.6 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

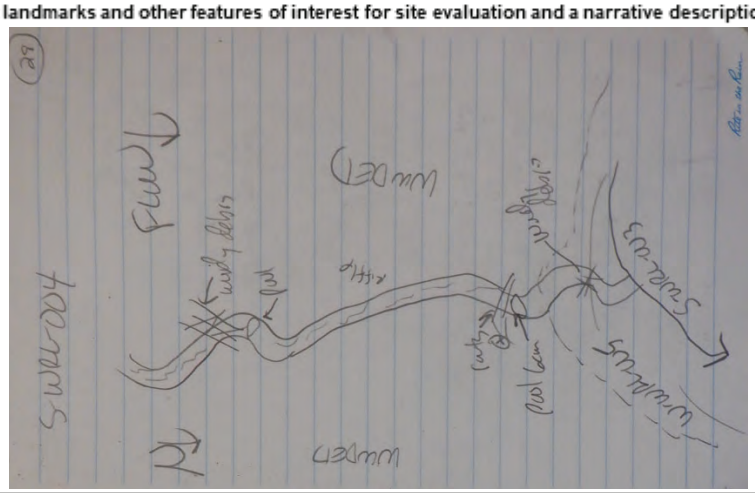
Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Plecoptera, snail eggs

Comments Regarding Biology: Minimal observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-004 **Date:** September 1, 2022 **Description:** Intermittent Class II PHW Facing Upstream	

Stream S-WRL-004 **Date:** September 1, 2022 **Description:** Intermittent Class II PHW Facing Downstream	

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-004

Date:

September 1, 2022

Description:

Intermittent

Class II PHW

Substrate

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3): 35

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-005 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.08

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37642 LONG: -82.45178 RIVER MILE: 0.01

DATE: 09/01/2022 SCORER: WRL, CRW COMMENTS: Intermittent stream, flows NNE to S-WRL-003 (Brushy Fork)

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
	BLDR SLABS [16 pts]	0%		SILT [3 pt]	15%
	BOULDER (>256 mm) [16 pts]	0%		LEAF PACK/WOODY DEBRIS [3 pts]	5%
	BEDROCK [16 pts]	0%		FINE DETRITUS [3 pts]	0%
	COBBLE (65-256 mm) [12 pts]	5%		CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	25%		MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%		ARTIFICIAL [3 pts]	0%

Substrate Percentage Check: 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 5

HHEI Metric Points — Substrate Max = 40: 20 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: Dry MAXIMUM POOL DEPTH (centimeters): 0.00

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

COMMENTS: 3.8' wide AVERAGE BANKFULL WIDTH (meters): 1.15

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☑	Dry channel, no water (ephemeral)

COMMENTS:

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

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☑	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Brushy Creek** Distance from Evaluated Stream 0.01

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5549- 5551

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures:Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☑ **Moderately Stable** ☐ **Unstable** ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

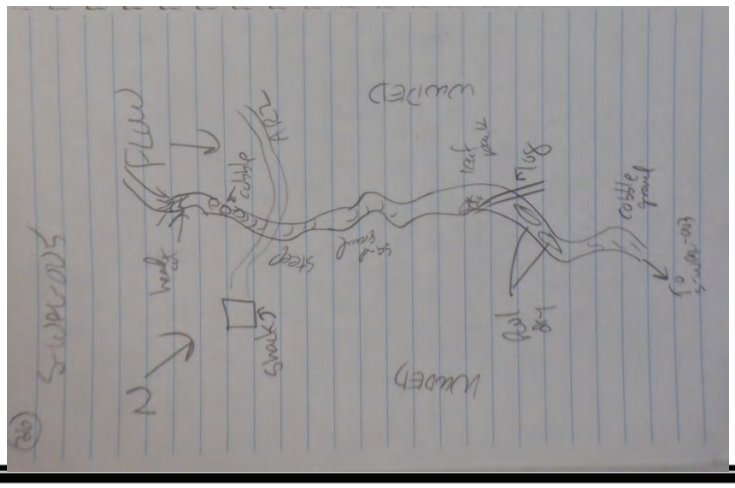
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): N/A

Comments Regarding Biology: None observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-005 **Date:** September 1, 2022 **Description:** Intermittent Class II PHW Facing Upstream	

Stream S-WRL-005 **Date:** September 1, 2022 **Description:** Intermittent Class II PHW Facing Downstream	

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-005	
Date: September 1, 2022	
Description: Intermittent Class II PHW Substrate	

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3) **18**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-006 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.006

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37455 LONG: -82.45599 RIVER MILE: 0.3

DATE: 09/02/2022 SCORER: WRL, CRW COMMENTS: Ephemeral; Dry, flows NE through ROW to S-WRL-007

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Substrate Percentage Check 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points Substrate Max = 40: **13** A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 feet)*** 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 [5pts]
- ☑ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: Dry MAXIMUM POOL DEPTH (centimeters): 0.00

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: 2.7' wide AVERAGE BANKFULL WIDTH (meters): 0.82

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 (Per Bank)

L	R	
☐	☐	Wide >10m
☑	☑	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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: DRY

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Brushy Fork Distance from Evaluated Stream 0.3-mile

☐ 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: Zaleski NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5554 - 5556

Elevated Turbidity?(Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (umhos/cm) N/A

Is the sampling reach representative of the stream (Y/N) N If not, explain: most of stream outside of ROW is wooded and a wider channel

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

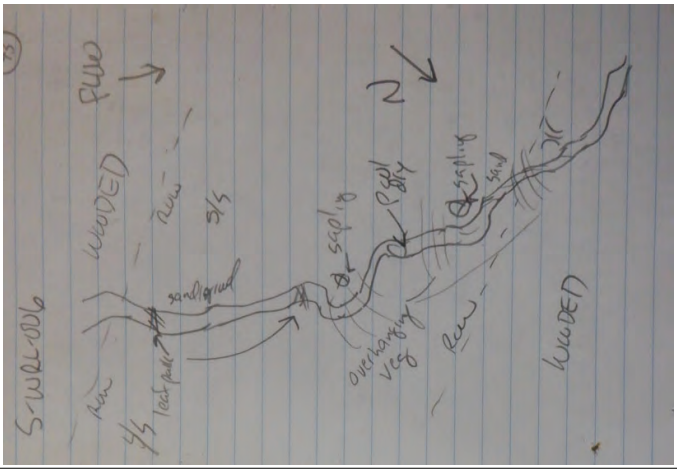
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): N/A

Comments Regarding Biology: None observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-006 **Date:** September 2, 2022 **Description:** Ephemeral Class I PHW Facing Upstream	

Stream S-WRL-006 **Date:** September 2, 2022 **Description:** Ephemeral Class I PHW Facing Downstream	

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-006

Date:

September 2, 2022

Description:

Ephemeral

Class I PHW

Substrate

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3): 56

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-007 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 184 LAT: 39.37468 LONG: -82.45592 RIVER MILE: 0.3

DATE: 09/02/2022 SCORER: WRL, CRW COMMENTS: Flows west, parallel to ROW edge

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	☐ BLDR SLABS [16 pts]	5%	☐	☐ SILT [3 pt]	15%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	☐ BEDROCK [16 pts]	0%	☐	☐ FINE DETRITUS [3 pts]	0%
☐	☐ COBBLE (65-256 mm) [12 pts]	10%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☑	☐ GRAVEL (2-64 mm) [9 pts]	30%	☐	☐ MUCK [0 pts]	0%
☐	☑ SAND (<2 mm) [6 pts]	30%	☐	☐ ARTIFICIAL [3 pts]	0%

Substrate Percentage Check: 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points

Substrate Max = 40: **21**

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☑ 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 10.00

Pool Depth Max = 30: **15**

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

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

COMMENTS: BF = 5.2' w x 1.0' d AVERAGE BANKFULL WIDTH (meters): 1.58

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

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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

☑ Stream Flowing	☐ Moist Channel, isolated pools, no flow (intermittent)
☐ Subsurface flow with isolated pools (interstitial)	☐ Dry channel, no water (ephemeral)

COMMENTS:

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

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Brushy Fork Distance from Evaluated Stream 0.3-mile

☐ 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: Zaleski NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5557 - 5559

Elevated Turbidity?(Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 19 Dissolved Oxygen (mg/l) N/A pH (S.U.) 5.8 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

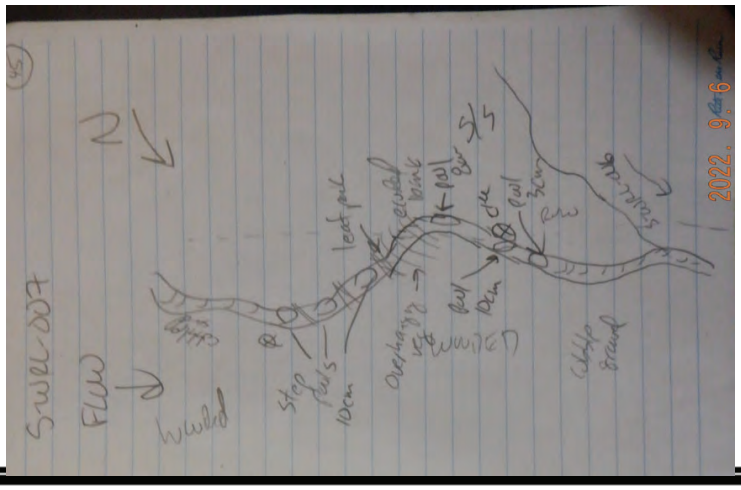
Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Ephemeroptera; Plecoptera; Crayfish

Comments Regarding Biology: Several critters observed.

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-007 **Date:** September 2, 2022 **Description:** Intermittent Class III PHW Facing Upstream	

Stream S-WRL-007 **Date:** September 2, 2022 **Description:** Intermittent Class III PHW Facing Downstream	

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-007

Date:

September 2, 2022

Description:

Intermittent

Class III PHW

Substrate

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **71**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project/ Brushy Creek

SITE NUMBER: S-WRL-008 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.17

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37512 LONG: -82.44843 RIVER MILE: 2.2

DATE: 09/02/2022 SCORER: WRL, CRW COMMENTS: Downstream crossing of S-WRL-003 (Brushy Creek); flowing south

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	3%
☐	BOULDER (>256 mm) [16 pts]	5%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	2%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00%

Substrate Percentage Check: 100%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points Substrate Max = 40: **21** A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☐	5 cm - 10 cm [15 pts]
☑	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHWM = 2.2 meters w x 0.4 meters d MAXIMUM POOL DEPTH (centimeters): 27.00

Pool Depth Max = 30: **30**

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

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

COMMENTS: BF = 2.55 meters w x 0.54 meters d AVERAGE BANKFULL WIDTH (meters): 2.55

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

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

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

☑	Stream Flowing	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS: _____

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

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Raccoon Creek (LRW) Distance from Evaluated Stream 4.6

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5589 - 5591

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 20.2 Dissolved Oxygen (mg/l) N/A pH (S.U.) 7.0 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) Y Species observed (if known): Eurycea bislineata (adult and juve observed)

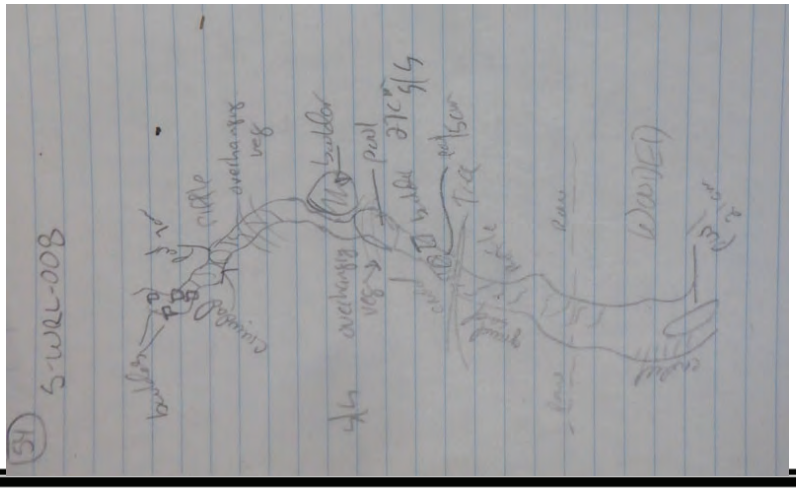
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):

Comments Regarding Biology: Salamanders seen

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-008 **Date:** September 2, 2022 **Description:** Perennial Class III PHW Facing Upstream	

Stream S-WRL-008 **Date:** September 2, 2022 **Description:** Perennial Class III PHW Facing Downstream	

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-008

Date:

September 2, 2022

Description:

Perennial

Class III PHW

Substrate

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3) **41**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-009 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.18

LENGTH OF STREAM REACH (ft): 56 LAT: 39.37515 LONG: -82.44740 RIVER MILE: 0.01

DATE: 09/02/2022 SCORER: WRL, CRW COMMENTS: Intermittent stream; starts partway through ROW; flowing south at headcut

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	2%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	3%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	25%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00%

Substrate Percentage Check: 100%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points

Substrate Max = 40

21

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☑	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHWM = 2.0'w x 0.5' d

MAXIMUM POOL DEPTH (centimeters): 7.00

Pool Depth Max = 30

15

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

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

COMMENTS: BF = 2.4' w X 0.6'd

AVERAGE BANKFULL WIDTH (meters): 0.70

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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:

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Brushy Creek** Distance from Evaluated Stream 0.01

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 5596-5598

Elevated Turbidity?(Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures: Temp (°C) 19.4 Dissolved Oxygen (mg/l) N/A pH (S.U.) 3.9 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

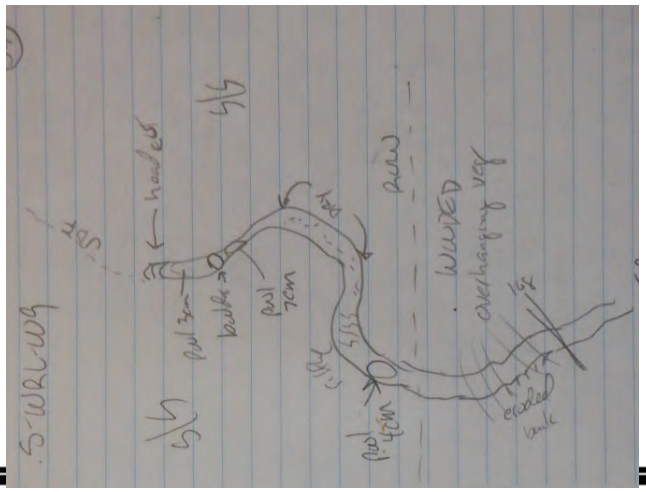
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):

Comments Regarding Biology: None observed

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-009 **Date:** September 2, 2022 **Description:** Intermittent Class II PHW Facing Upstream	

Stream S-WRL-009 **Date:** September 2, 2022 **Description:** Intermittent Class II PHW Facing Downstream	

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-009

Date:

September 2, 2022

Description:

Intermittent

Class II PHW

Substrate

Headwater Habitat Evaluation Index Field Form

Ohio Environmental Protection Agency

HHEI Score (sum of metrics 1+2+3) **60**

SITE NAME/LOCATION: AEP Ilesboro 138 kV Project

SITE NUMBER: S-WRL-010 RIVER BASIN: Southeast Ohio Tributaries RIVER CODE: N/A DRAINAGE AREA (mi²): 0.05

LENGTH OF STREAM REACH (ft): 200 LAT: 39.37549 LONG: -82.44501 RIVER MILE: 0.1

DATE: 09/02/2022 SCORER: WRL, CRW COMMENTS: Intermittent stream, flowing south

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Substrate Percentage Check 100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 5

HHEI Metric Points

Substrate Max = 40

20

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* 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]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☑	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: OHWM = 4.1'w x 0.6' d MAXIMUM POOL DEPTH (centimeters): 18.00

Pool Depth Max = 30

25

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

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

COMMENTS: BF = 4.3' w X 1.1'd AVERAGE BANKFULL WIDTH (meters): 1.40

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 (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

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: _____

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

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☑ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score N/A (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Brushy Creek** Distance from Evaluated Stream 0.05

☐ 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: New Plymouth NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Vinton Township/City: Swan Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/31/2022 Quantity: 0.74"

Photo-documentation Notes: 2674- 2676

Elevated Turbidity?(Y/N): N Canopy (% open): 60

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): N/A

Field Measures:Temp (°C) 20.3 Dissolved Oxygen (mg/l) N/A pH (S.U.) 3.3 Conductivity (umhos/cm) N/A

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

Additional comments/description of pollution impacts: N/A

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): N/A

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): N/A

Salamanders Observed? (Y/N) N Species observed (if known): N/A

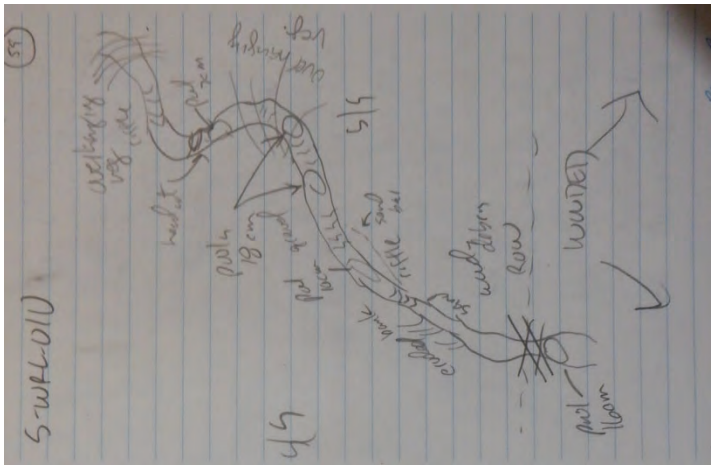
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):

Comments Regarding Biology: None observed

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

FLOW



AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-010

Date:

September 2, 2022

Description:

Intermittent

Class II PHW

Facing Upstream

Stream S-WRL-010

Date:

September 2, 2022

Description:

Intermittent

Class II PHW

Facing Downstream

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Stream S-WRL-010

Date:

September 2, 2022

Description:

Intermittent

Class II PHW

Substrate

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-001 Facing upstream

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-001 Facing downstream

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 1, 2022	
Description: UDF-WRL-002 Facing upstream	

Upland Drainge Feature	
Date: September 1, 2022	
Description: UDF-WRL-002 Facing downstream	

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-002 Substrate

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-003 Facing upstream

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature **Date:** September 1, 2022 **Description:** UDF-WRL-003 Facing downstream	

Upland Drainge Feature **Date:** September 1, 2022 **Description:** UDF-WRL-003 Substrate	

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	**Site Location:**	**Project No.**
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 30, 2020	
Description: UDF-WRL-004 Facing north	

Upland Drainge Feature	
Date: September 30, 2020	
Description: UDF-WRL-004 Facing east	

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-005 Facing upstream

Upland Drainge Feature
Date: September 1, 2022
Description: UDF-WRL-005 Facing downstream

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	**Site Location:**	**Project No.**
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 1, 2022	
Description: UDF-WRL-005 Substrate	

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-006 Facing upstream	

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-006 Facing downstream	

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-006 Substrate	

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-007 Facing upstream

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-007 Facing downstream

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-007 Substrate	

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-008 Upstream	

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	**Site Location:**	**Project No.**
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-008 Downstream	

Upland Drainge Feature	
Date: September 2, 2022	
Description: UDF-WRL-009 Facing Upstream	

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-009 Facing downstream

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-009 Substrate

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-010 Facing upstream

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-010 Facing downstream

AECOM

PHOTOGRAPHIC RECORD
UPLAND DRAINAGE FEATURES

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Upland Drainge Feature
Date: September 2, 2022
Description: UDF-WRL-010 Substrate

APPENDIX E

Habitat Photographs

AECOM

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 1	
Date: September 30, 2020	
Description: Grassland within Addendum 2 Project Survey Area Facing North	

Photo Location 1	
Date: September 30, 2020	
Description: Grassland within Addendum 2 Project Survey Area Facing West	

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	**Site Location:**	**Project No.**
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 2
Date: September 1, 2022
Description: Urban land within Addendum 2 Project Survey Area ROW crossing Hwy 56 Facing East

Photo Location 3
Date: September 1, 2022
Description: Forest within proposed ROW Facing North

AECOM

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 4	
Date: September 1, 2022	
Description: Forest within proposed ROW Facing North	

Photo Location 5	
Date: September 1, 2022	
Description: Landscaped habitat within ROW Facing East	

AECOM

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 6	
Date: September 2, 2022	
Description: Scrub-shrub habitat within ROW Facing South	

Photo Location 7	
Date: September 2, 2022	
Description: Old field habitat within ROW Facing North	

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 7	
Date: September 2, 2022	
Description: Old field habitat within ROW Facing West	

Photo Location 8	
Date: September 2, 2022	
Description: Scrub-shrub habitat within ROW Facing East	

AECOM

PHOTO LOCATIONGRAPHIC RECORD

HABITAT

Client Name:	Site Location:	Project No.
AEP	Fiddlestix Switch-Ilesboro South Central Power 138 kV Tranmission Line Project	60624128

Photo Location 9	
Date: September 2, 2022	
Description: Hay Field/Pasture habitat within exisiting ROW Facing East	

Photo Location 9	
Date: September 2, 2022	
Description: Hay Field/Pasture habitat within exisiting ROW Facing West	

APPENDIX F

Agency Correspondence

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

September 30, 2022

Hannah Apatang
AECOM
525 Vine Street
Suite 1800
Cincinnati, OH 45202

Re: 22-0880; Fiddlestix Switch-Ilesboro South Central Power Transmission Line Extension Project

Project: The project proposes to install approximately 1.8 miles of greenfield 138 kV transmission line to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit.

Location: The proposed project is located in Swan Township, Vinton County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species.

During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of little spectaclecase (*Villosa lienosa*), a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, and the spotted darter (*Etheostoma maculatum*), a state endangered fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect

hellbender habitat. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

September 21, 2022

Project Code: 2022-0076728

Reference: Fiddlestix Switch - Ilesboro South Central Power 138kV Transmission Line Project, Addendum 2, Vinton County, Ohio

Dear Ms. Apatang,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see https://ecos.fws.gov/ecp/species/9045), incidental take of Indiana bats is still prohibited without

a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.
If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

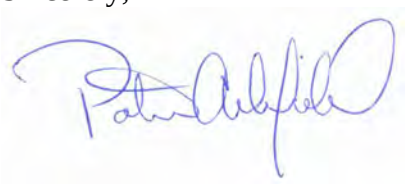
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

September 1, 2022

Attention: Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693

Via email: environmentalreviewrequest@dnr.state.oh.us; NHDRequest@dnr.state.oh.us

Reference: Fiddlestix Switch-Ilesboro South Central Power 138kV Transmission Line Project, Extension
Vinton County, Ohio

Dear Mr. Kessler:

AEP Ohio Transmission Company, Inc. (AEP), is formally requesting that the Ohio Department of Natural Resources (ODNR) complete a review for the proposed Fiddlestix Switch-Illesboro South Central Power 138 kV Transmission Line Extension, Structures 85-91 (Project) located in Vinton County, Ohio. The Project is proposing to install approximately 1.8 miles of greenfield 138 kV transmission line to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit. The Project Study Area is located on the Zaleski and New Plymouth, Ohio U.S. Geologic Survey 7.5' topographical quadrangles as displayed on the Project Topographic Overview Map (Figure 1).

AECOM completed a desktop review of publicly available data to identify abandoned underground mines within 0.25-mile of the Project area. The data sources utilized include USGS topographical maps, aerial photography, and ODNR's Division of Mineral Resources and Geological Survey Data for Known Mining Activity and Karst Geology/Sinkholes as shown on Figure 1 and 2. Based on the available desktop resources, there are two (2) abandoned underground mine openings and several historic and inactive surface mines located within 0.25-mile of the Project. There are no karst features located within 0.25-miles of the Project.

Please provide us with the results of the ODNR's environmental review, including results of the ODNR Natural Heritage Database search, at your earliest convenience. If you have questions or need additional information regarding the Project, please contact me at the phone number or email below. Thank you for your assistance with this request.

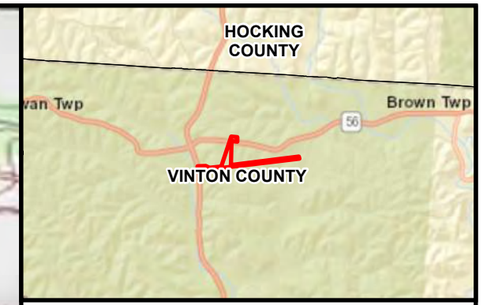
Sincerely,

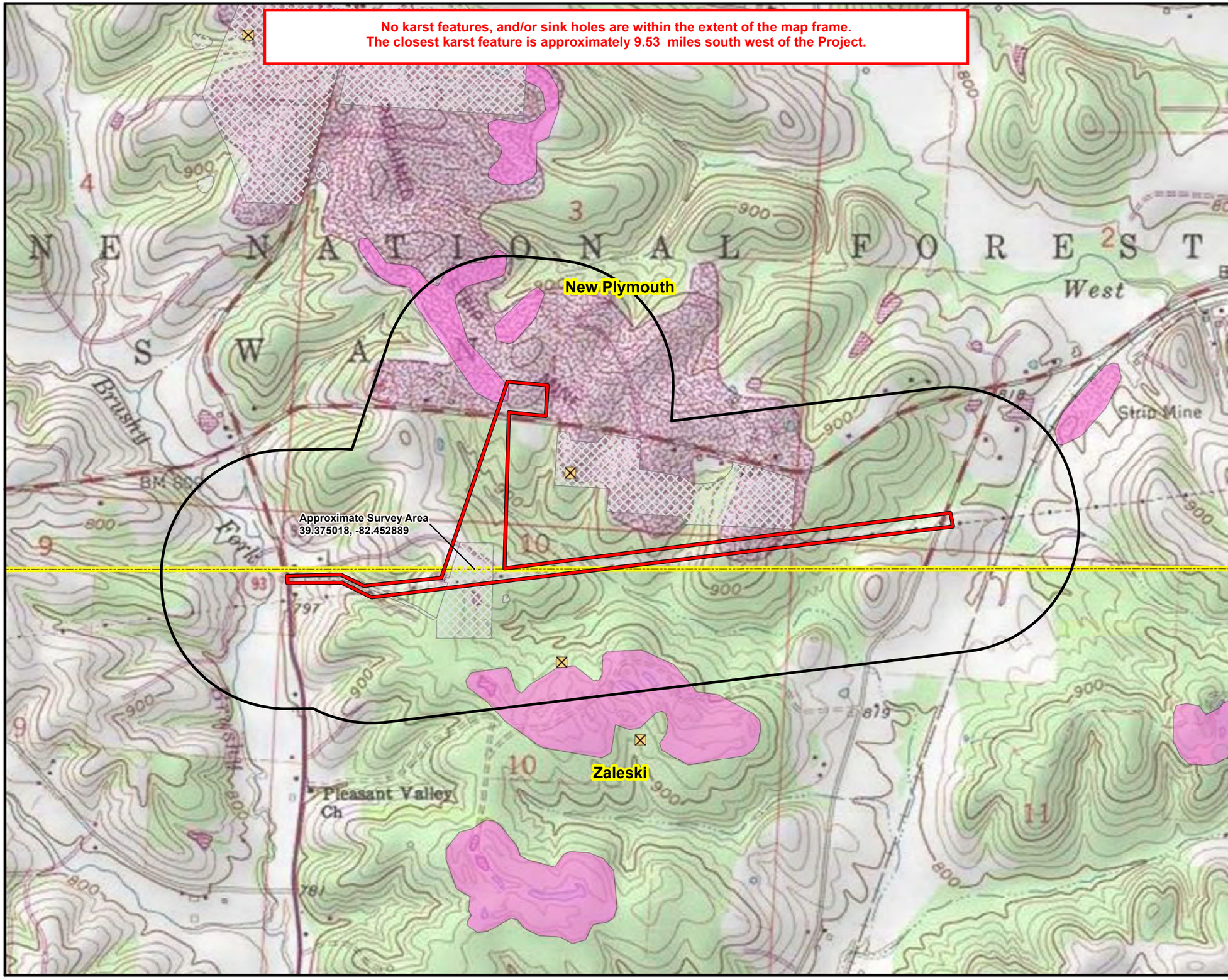
Hannah Apatang
Ecologist III
Phone: (419-308-0980)
Email: hannah.pharesapatang@aecom.com

CC: Amy J. Toohey
Environmental Specialist-Consultant
Phone: (614-565-1480)
Email: ajtoohey@aep.com

Attachments:
Figure 1 – Topographic Project Overview
Figure 2 – Aerial Project Overview
Natural Heritage Data Request Form
Electronic Shapefiles (.shp)

No karst features, and/or sink holes are within the extent of the map frame.
The closest karst feature is approximately 9.53 miles south west of the Project.





Legend

- Abandoned Underground Mines - Point of Unknown Extent
- Surface Mine - Inactive Coal Mining Operation
- Historic Surface Coal Mines
- Quarter Mile Review Area
- Project Area for Survey
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 500 1,000 2,000

Feet

Fiddlestix Switch-Ilesboro South
Central Power 138kV
Transmission Line

FIGURE 1

TOPOGRAPHIC PROJECT OVERVIEW

DATE: 8/18/2022	1 INCH = 1,000 FEET
CREATED BY: PMH	CHECKED BY:
JOB NO.: 60624128	AECOM

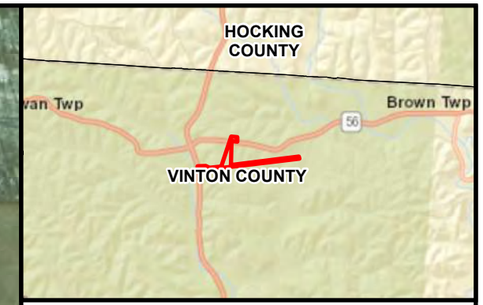
Date Saved: 8/18/2022
Document Path: Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Illesboro\GIS\S1_Agency\ODNR_Fig1_ProjectOverview.mxd

No karst features, and/or sink holes are within the extent of the map frame.
The closest karst feature is approximately 9.53 miles south west of the Project.

New Plymouth

Approximate Survey Area
39.375018, -82.452889

Zaleski



Legend

- Abandoned Underground Mines - Point of Unknown Extent
- Surface Mine - Inactive Coal Mining Operation
- Historic Surface Coal Mines
- Quarter Mile Review Area
- Project Area for Survey
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 500 1,000 2,000

Feet

Fiddlestix Switch-Ilesboro South
Central Power 138kV
Transmission Line

FIGURE 2
AERIAL PROJECT OVERVIEW

DATE: 8/18/2022	1 INCH = 1,000 FEET
CREATED BY: PMH	CHECKED BY:
JOB NO.: 60624128	AECOM

Date Saved: 8/18/2022
Document Path: Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60624128_AEP_Illesboro\GIS\1_Agency\ODNR_Fig2_ProjectOverview.mxd

Ohio Department of Natural Resources
DIVISION OF WILDLIFE

NATURAL HERITAGE DATA REQUEST FORM

ODNR Division of Wildlife
Ohio Natural Heritage Program
2045 Morse Rd., Bldg. G-3
Columbus, OH 43229-6693
Email: NHDRequest@dnr.state.oh.us
Phone: 614-265-6818

WHAT KIND OF REVIEW DO I NEED?

ODNR provides two kinds of project reviews, an Ohio Natural Heritage Database (ONHD) data request and an Environmental Review (ER). ONHD data requests will be processed for projects that meet one of the following four criteria:

- consultant prepared reports for ODOT projects
- completion of OEPA's Ohio Rapid Assessment Method for wetlands
- academic research projects
- other non-development or non-construction projects

As applicable to your project, the ONHD will provide records for state and federally listed plants and animals, high quality plant communities, geologic features, breeding animal concentrations, scenic rivers, protected natural areas (managed areas), and significant unprotected natural areas (conservation sites). A one mile radius around the project site will automatically be searched. Because the ONHD contains sensitive information, it is our policy to provide only the data needed to complete your specific project.

If your project does not meet one of these criteria, you will need to submit it for an ER. An ER includes comments on potential impacts to the species and their habitats, and therefore constitutes coordination with ODNR under NEPA, the Fish & Wildlife Coordination Act, the Federal Water Pollution Control Act, and other laws. If your project requires ODNR coordination, please go to http://realestate.ohiodnr.gov/environmental-review for additional information including appropriate contacts. An ONHD search is included as part of the environmental review process.

INSTRUCTIONS:

Please complete all the information on both sides of this form, sign (required) and email it to NHDRequest@dnr.state.oh.us. Please provide a description of the work to be performed at the project site, and a map detailing your project site boundaries. If you request a GIS response, please also submit a shapefile of your project site (unbuffered). Data requests will be completed within approximately 30 days. There is currently no charge to process requests.

Date: September 1, 202 **Company name:** AECOM Technical Services, Inc.

Name of person response letter should be addressed to:

Mr. ☐ **Ms.** ☑ Hannah Apatang

Address: 525 Vine Street Suite 1800

City/State/Zip: Cincinnati, Ohio 45202

Phone: 419-308-0980

E-mail address: *hannah.pharesapatang@aecom.com*

Project Name: Fiddlestix Switch-Ilesboro South Central Power 138kV Transmission Line Pr

Project Site Address: Linear Project Area - See Coordinates

Project County: Vinton

Project City or Township: New Plymouth

Project site is located on the following USGS 7.5 minute topographic quad(s):

New Plymouth and Zaleski

Project latitude and longitude: 39.37494, -82.44979

Description of work to be performed at the project site:

The Project is proposing to install approximately 1.8 miles of greenfield 138 kV transmission line to tie the new Ilesboro delivery point to the Lemaster-Ross 138kV circuit.

How do you want your data reported? Both formats provide the same data. The manual search is most appropriate for small scale projects or for those without GIS capabilities. With this option we will send you a letter with a list of records and a map showing their location. If you request a GIS shapefile, we will send you a letter and shapefile of data layers. You will then need to make your own map and list of data for your report. You must have GIS capabilities. If you do not make a selection or if you choose both options, a manual search will be performed (Please choose only one option).

☐ **Printed list and map (manual search)** **OR** ☑ **GIS shapefile (computer search)**

The standard data we search includes state and federally listed plants and animals, high quality plant communities, geologic features, breeding animal concentrations, scenic rivers, managed areas, and conservation sites, including a one mile radius around your project area. List any information in addition to this that you require:

Locations of wetlands that have records of state and/or federal endangered species and significant breeding/nonbreeding bird concentrations as well as presence of high quality wetlands.

How will the information be used?

Completion of OEPA's "Ohio Rapid Assessment Method for Wetlands" forms

The chief of the Division of Wildlife has determined that the release of the ONHD data you have requested could be detrimental to the conservation of a species or unique natural feature. Pursuant to section 1531.04 of the Ohio Revised Code, this information is not subject to section 149.43 of the Revised Code. By signing below, you certify that the data provided will not be disclosed, published, or distributed beyond the scope of your project.

Signature Hannah Apatang Digitally signed by Hannah Apatang Date: 2022.09.01 09:47:41 -04'00' **Date:** **September 1, 2022**

Summary: Notice Construction Notice electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.