# AMERICAN TRANSMISSION SYSTEMS, INCORPORATED A FIRSTENERGY COMPANY

# LETTER OF NOTIFICATION

# KNOX-NOTTINGHAM 138 kV TRANSMISSION LINE REBUILD PROJECT KILGORE (POLO ROAD)-NEW STACY BUC SEGMENT

**OPSB CASE NO.: 22-0285-EL-BLN** 

April 8, 2022

American Transmission Systems, Incorporated 76 South Main Street Akron, Ohio 44308

### LETTER OF NOTIFICATION KNOX-NOTTINGHAM 138 kV TRANSMISSION LINE REBUILD PROJECT - KILGORE (POLO ROAD)-NEW STACY BUC SEGMENT

The following information is being provided in accordance with Ohio Administrative Code (OAC) Chapter 4906-6 for the application and review of Accelerated Certificate Applications. Based upon the requirements found in Appendix A to OAC Rule 4906-1-01, this Project qualifies for submittal to the Ohio Power Siting Board ("Board") as a Letter of Notification application.

### 4906-6-05: ACCELERATED APPLICATION REQUIREMENTS

### 4906-6-05(B)(1): Name and Reference Number

Name of Project:Knox-Nottingham 138 kV Transmission Line Rebuild<br/>Project-- Kilgore (Polo Road)-New Stacy BUC Segment<br/>("Project").

(Reference Number: 2031-2)

### 4906-6-05 (B)(1): Brief Description of the Project

In this Project, American Transmission Systems, Incorporated ("ATSI"), a FirstEnergy company, proposes to rebuild and reconductor the approximate 9-mile Kilgore (Polo Road) to New Stacy BUC segment of the approximately 44-mile Knox-Nottingham 138 kV Transmission Line ("Kilgore (Polo Road)-New Stacy BUC Segment" or "Project").

The Kilgore (Polo Road)-New Stacy BUC Segment extends from existing Structure No. 2788 (new Structure No. 332), the point of interconnection with American Electric Power ("AEP") in Carroll County, to existing Structure No. 2732B (new Structure No. 276), the point of interconnection with Buckeye Power in Harrison County. The Project will traverse Perry Township in Carroll County and Rumley and Archer Townships in Harrison County, Ohio. The Project will be comprised of the following:

- 1. The Project will rebuild the existing wood pole H-frame structures, along the existing centerline, by using a combination of steel structures on concrete foundations or direct embed steel structures.
- The existing conductor, 477 kcmil 24/7 ACSR, will be replaced with 795 kcmil 26/7 ACSR.

The general location of the Project is shown in Exhibit 1, a partial copy of the United States Geologic Survey, Jewett and Scio Quad Maps. Exhibit 2 is a partial copy of ESRI aerial imagery. A general layout of the project is shown in Exhibit 3.

In April 2021, representatives of ATSI met with technical and legal Staff of the Ohio Power Siting Board ("OPSB Staff") to discuss ATSI's 64-mile Holloway-Knox Project, which is divided into two sections: the 44-mile Knox-Nottingham and the 20-mile Holloway-Nottingham #1 and #2. The two sections are in turn divided into the multiple segments. As noted below in section 4906-6-05(B)(2), there were several logistical aspects of the rebuild project that contributed to a joint decision between ATSI and OPSB Staff that the Project would be framed in accordance with each segment. Due to restrictions on construction, outage schedules, and the need to minimize service disruptions, the improvements required to fix deteriorating facility conditions cannot be completed in a single project and must be broken into segments. As such, there will be four segments in addition to this Project, as follows:

- Knox to Washington Segment (Approved and certificated by the OPSB in Case No. 21-0667-EL-BLN)
- Washington to Kilgore (Polo Road) Segment
- New Stacy BUC to Nottingham Segment
- Holloway-Nottingham #1 and #2 Segment

### 4906-6-05 (B)(1): Letter of Notification Requirement

The Project meets the requirements for a Letter of Notification because the Project is within the types of projects defined by Item (2)(b) of the Application Requirement Matrix

for Electric Power Transmission Lines, Appendix A of OAC Rule 4906-1-01. This item states:

(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:

(b) More than two miles.

The proposed Project is within the requirements of Item (2)(b) as it involves replacing structures and conductor for a distance greater than two miles.

### 4906-6-05 (B)(2): Need for the Project

ATSI needs to rebuild all 64 miles of the Holloway to Knox 138 kV Transmission Line in light of deteriorating facility conditions and the growing amount of maintenance required to maintain the line as-is. The primary benefit of the Project is to enhance system reliability through protection from unplanned outages, and to augment ATSI's operating flexibility as well as system resiliency by replacing deteriorating wood poles and by updating the existing conductor and shield wires. In turn, replacement of these facilities supports future load growth in the area for new and existing customers. Routine line inspections have shown an ever-increasing number of active conditions that require repair, leading to an overall worsened line condition. The most recent transmission line inspection conducted by a third-party contractor in April 2020, found that 39 of 57 structures (approximately 68%) of the Kilgore (Polo Road) – New Stacy BUC Segment were defective and were rejected. Table 1 summarizes the results of that inspection.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Similar structural problems are present along the entire Holloway-Knox 138 kV Transmission Line. However, the improvements required to fix these deteriorating facility conditions cannot be completed in a single project and must be broken into segments, designed to accommodate construction sequencing, outage schedules, and the need to minimize service disruptions.

Defect Type	Defect Count
Woodpecker Holes	29
<b>Repaired Woodpecker Holes</b>	8
Decay	1
Failed Sound Test	1

**Table 1– Pole Inspection Summary** 

Wood poles are considered rejected when defects render a pole unsafe, unreliable, or non-compliant with current code, including the rejection of wood poles when the pole strength has been reduced to 2/3<sup>rd</sup> of the original design strength. This is in line with the National Electrical Safety Code ("NESC") Table 261-1, note 2, which states: "wood and reinforced structures shall be replaced or rehabilitated when deterioration reduces the structure strength to 2/3 of that required when installed..."

The primary reasons for structure rejection on this Project is damage caused by woodpeckers, which is a major concern for all wood poles. The damage results in varying amounts of structural degradation depending where on the structure the damage takes place. The standard maintenance procedures include filling the holes and wrapping the pole in a metal mesh to prevent further damage; however, woodpeckers typically return to either a different location on the same pole or go to a different pole and the problem continues. If woodpecker damage occurs near a critical point on the structure such as the x-brace or crossarm attachment points, the pole must be replaced. Ultimately, woodpeckers may return to cause the same type of damage. The proposed upgrade to steel structures eliminates this maintenance problem.

As part of this Project, ATSI proposes to upgrade the conductor to its standard of 795 kcmil 26/7 ACSR, which will allow for future load growth and generator connections, if any occur, while adding sufficient margins to the transmission system. The new proposed

conductors meet FirstEnergy's current standard. Upgrading to the current standard will improve reliability and performance.

Lastly, the shield wires will be replaced with one 7#8 Alumoweld shield wire and OPGW in the second position. Since 2016, it has been a FirstEnergy practice to include OPGW in one of the static wire positions for any transmission line rebuild project. This enables the modernization of grid protection and control communication between substations.

The need for the entire Holloway-Knox project was first presented at the August 31, 2018 Subregional Regional Transmission Expansion Plan (SRRTEP) Committee Western meeting. A month later, on September 28, 2018, the proposed solution was presented and was assigned PJM supplemental RTEP number s1718. Since that time, the scope of the overall project changed and was re-presented at the September 11, 2020 SRRTEP Committee Western meeting and assigned RTEP number s2389. The PJM SSRTEP-Western presentation slide from the 2020 meeting is included as Exhibit 4 and provides additional details of the project drivers.

### 4906-6-05 (B)(3): Location of the Project Relative to Existing or Proposed Lines

The location of the Project relative to existing or proposed lines is shown in the ATSI Transmission Network Map, included as part of the confidential portion of the FirstEnergy Corp. 2021 Long-Term Forecast Report. This map was submitted to the PUCO in Case No. 21-0504-EL-FOR under Rule 4901:5-5:04 (C)(2)(b) of the Ohio Administrative Code. The map is incorporated by reference only. This map shows ATSI's 345 kV and 138 kV transmission lines and transmission substations including the Knox-Nottingham 138 kV Transmission Line. The Project is included on page 39 of the Long-Term Forecast Report and is a part of the larger Holloway-Nottingham-Knox 138 kV Line Rebuild Project. The general location and layout of the project area is shown in Exhibits 1 and 2.

### 4906-6-05 (B)(4): Alternatives Considered

Due to the physical condition of the existing transmission line and nature of the Project, there were only two alternatives considered; replace only the identified failed structures or full rebuild.

### **Alternative 1:**

Replace 39 failed wood H-frame structures with wood H-frame structures and re-use the existing conductor and shield wire. Includes construction of approximately 6.39 miles of access roads and restoration after replacement.

### Alternative 2

Rebuild 9.0 miles of the transmission line consisting of replacing all existing wood pole structures with steel monopoles, replacing conductor with 795 kcmil 26/7 ACSR and replacing the shield wire with 7/8# Alumoweld shield wire and OPGW. Includes construction of approximately 6.82 miles of access roads and restoration after project completion.

Several factors were considered by ATSI in opting to rebuild the entire line rather than continuing to maintain the deteriorating facilities. These factors include:

### **Existing Wood Pole Condition**

As described in Section 4906-6-05 (B)(2), approximately 68% of the wood poles have physical damage and/or signs of deterioration. This percentage will only increase over time, resulting in multiple returns, increased impact and greater costs. Replacing all the poles with steel eliminates damage caused by woodpeckers, reduces maintenance and extends the life of the facilities.

### **Conductor Replacement and Upgrade**

ATSI proposes to replace and upgrade the conductor to its current standard of 795 kcmil 26/7 ACSR as part of the proposed Project. As stated above, this would not be completed under the Alternative 1 scenario. Not only does it upgrade the conductor to current standards, it increases the line rating to 275 MVA (Summer Normal). The upgrade will

improve reliability and performance as well as support future load growth in the area. Lastly, by replacing the conductor as part of this Project, it eliminates the need for a complete reconductor project in the coming years as the conductor is aging along with the rest of the facilities.

### **Communications**

Although outside the scope of this application, this Project will also facilitate ATSI's replacing the existing shield wire with one 7#8 Alumoweld shield wire and one Optical Ground Wire ("OPGW"). With the addition of OPGW in the proposed Project, ATSI is able to modernize grid protection and control communications between substations. Since the installation method is identical to traditional shield wire, the cost per mile of adding OPGW is negligible compared to the return on the investment from a reliability and communication perspective. If pole replacement is done under a maintenance approach, OPGW would not be installed, and a separate alternative fiber route may be required to meet communication enhancement needs.

### Land Use and Sensitive Areas

As referenced in Section 4906-6-05 (B)(10), the land use in the area of the Project is primarily rural residential, agricultural, and mining. Disruption to landowners and/or operators are minimized in the proposed Project as opposed to the multiple number of access times that would be necessary under the maintenance alternative. In cases where crops are planted, multiple access increases the potential for crop damage and payment for the loss.

The United States Fish and Wildlife Service ("USFWS") and the Ohio Department of Natural Resources ("ODNR") identified the state and federally listed species that may potentially be affected by the Project. Seasonal restrictions along with avoidance and minimization measures were identified to reduce impacts to these species.

Overall, land use impacts, including but not limited to crop and other environmental features, increase with multiple mobilizations as compared to a single construction project as proposed. These impacts along with the installation of barriers or matting and

adhering to seasonal restrictions lead to increase costs and complicate construction sequencing and outage coordination.

#### Safe and Reliable Service

ATSI has a duty to provide safe and reliable service to its customers and the condition of the Kilgore (Polo Road) – New Stacy BUC Segment presents a significant risk to ATSI's ability to meet this obligation. The Knox-Nottingham 138 kV Transmission Line serves multiple delivery points, including Buckeye Power's New Stacy Substation and AEP's Kilgore (Polo Road) Substation. Should the Knox-Nottingham Transmission 138 kV Line fail, customers served from the New Stacy and Kilgore (Polo Road) Substations would be out of service.

The best approach is to completely rebuild the Kilgore (Polo Road) – New Stacy BUC Segment of the Knox-Nottingham 138 kV Transmission Line. ATSI believes that the rebuild project is the most cost effective, least impactful, and effective approach to ensure its ability to continue to provide safe and reliable service to its customers.

### 4906-6-05 (B)(5): Public Information Program

ATSI's manager of External Affairs will advise local officials of features and the status of the proposed Project as necessary. ATSI will maintain a copy of this Letter of Notification, along with other Project information, on FirstEnergy's website:

https://www.firstenergycorp.com/about/transmission\_projects/ohio.html.

ATSI will publish notice of the Project in the Carroll County Messenger and the Harrison News Herald within 7 days of filing this Letter of Notification application. The notice will comply with OAC 4906-6-08(A)(1)-(6). In addition to the public notice, ATSI will mail letters in accordance with OAC 4906-6-08(B) explaining the Project to affected landowners and tenants and informing them of the Project's anticipated construction and restoration activities sequencing, including the start date and overall time frame.

During all phases of this Project, the public may contact ATSI through the transmission projects hotline at 1-888-311-4737 or via email at:

transmissionprojects@firstenergycorp.com.

### 4906-6-05 (B)(6): Construction Schedule

The construction schedule for this Project is expected to begin as early as September 2022 and is proposed to be completed/in-service by April 2023.

### 4906-6-05 (B)(7): Area Map

Exhibit 1 depicts the general location of the Project on a partial copy of the United States Geological Survey, Jewett and Scio Quad Maps. Exhibit 2 provides a partial copy of Bing aerial imagery of the Project area.

### 4906-6-05 (B)(8): Property Owner List

The Project is located on existing right-of-way. New temporary access rights may be required as part of the Project. Exhibit 5 contains a list of properties affected by the Project, specifying whether ATSI either has obtained or has not yet acquired the necessary easement/right-of-way/land rights.

### 4906-6-05 (B)(9): TECHNICAL FEATURES OF THE PROJECT

### 4906-6-05 (B)(9)(a): Operating Characteristics

The transmission line construction will have the following characteristics:

Voltage:	138 kV			
Conductors:	795 kcmil 26/7 ACSR			
Static Wire:	OPGW and 7#8 Alumoweld			
Insulators:	Polymer and/or Porcelain			
ROW Width:	150 feet (100-foot cleared corridor)			
Land Requirements:	Access Rights			
Structure Types:	Exhibit 6: 138 kV Single Circuit Steel Pole, Suspension			
	(approximately 37 Structures)			

Exhibit 7: 138 kV Single Circuit Steel Pole, Deadend (approximately 7 Structures)
Exhibit 8: 138 kV Single Circuit Steel Pole, Strain (approximately 5 Structures)
Exhibit 9: 138 kV Single Circuit Steel Pole, Angle (approximately 4 Structures)
Exhibit 10: 138 kV Single Circuit Steel Pole, Switch (approximately 2 Structures)
Exhibit 11: 138 kV Single Circuit Steel Pole, Tap (approximately 2 Structures)

### 4906-6-05 (B)(9)(b): Electric and Magnetic Fields

As there are occupied residences or institutions within 100 feet from the existing transmission line centerline, Electric and Magnetic Field ("EMF") calculations are required by this code provision.

#### <u>4906-6-05 (B)(9)(b)(i): Calculated Electric and Magnetic Fields Strength Levels</u>

The Project is a 9.0 mile single circuit transmission line located on a 150-foot right-ofway that does not share the right-of-way with any other transmission lines.

Table 2 itemizes the line loading of the Project. The normal line loading represents FirstEnergy's peak system load for the transmission lines. The emergency line loading represents the maximum line loading under contingency operation. The winter rating is based on the continuous maximum conductor rating ("MCR") of the circuit for the single conductors per phase and an ambient temperature of zero degrees centigrade (32 °F), wind speed of 1.3 miles per hour, and a circuit design operating temperature of 100 °C (212 °F).

Line Name	Normal	Emergency	Winter Rating
	Loading Amps	Loading Amps	Amps
Kilgore (Polo Road) – New Stacy BUC Segment of the Knox-Nottingham 138 kV Transmission Line	291	355	1320

**Table 2: Transmission Line Loading** 

Table 3 provides an approximation of the magnetic and electric fields strengths of the Project. The calculations provide an approximation of the electric and magnetic fields levels based on specific assumptions utilizing the EPRI EMF Workstation 2015 program software. This program software assumes the input transmission line configuration is located on flat terrain. Also, a balanced, three-phase circuit loading is assumed for the transmission circuit. The model utilizes the normal, emergency, and winter rating of the transmission line.

Kilgore (Polo Road) – New Stacy BUC Segment, 150-foot ROW		Electric Field kV/m	Magnetic Field mG
Normal	Under Lowest Conductors	1.059	33.41
Loading	At Right-of-Way Edges	0.188 / 0.235	6.54 / 7.25
Emergency	Under Lowest Conductors	1.059	40.27
Loading	At Right-of-Way Edges	0.188 / 0.235	8.39 / 9.1
Winter	Under Lowest Conductors	1.059	149.73
Rating	At Right-of-Way Edges	0.188 / 0.235	31.21 / 32.1

Table 3: EMF Calculations for Knox-Washington 138 kV Transmission Line

### <u>4906-6-05 (B)(9)(b)(ii): Alternative Design Consideration for Electric and Magnetic</u> <u>Fields</u>

The strength of EMFs can potentially be reduced by installing the transmission line conductors in a compact configuration by selecting conductor phasing that reduces the field strengths. ATSI designs its facilities according to the requirements of the NESC.

The pole heights and configuration were chosen based on NESC specifications, engineering parameters, and cost. ATSI's typical practice, as proposed in this the new construction portions of this Project, is to install 138 kV transmission lines primarily on single circuit steel pole tangent structures supported on suspension insulators – this is a compact design that reduces EMF field strengths in comparison to other installations.

### 4906-6-05 (B)(9)(c): Estimated Cost

The estimated capital cost for the proposed Project is approximately \$21,457,000.

### 4906-6-05 (B)(10): SOCIAL AND ECOLOGICAL IMPACTS

### 4906-6-05 (B)(10)(a): Land Uses

The Project is located in Perry Township, Carroll County, and Rumley and Archer Townships, Harrison County, Ohio. The main land use around the Project is rural residential, agricultural, and mining land.

### 4906-6-05 (B)(10)(b): Agricultural Land

A list of all agricultural land and acreage including agricultural district land is provided in Exhibit 5.

### 4906-6-05 (B)(10)(c): Archaeological or Cultural Resources

On behalf of ATSI, Jacobs Engineering Group, Inc. ("Jacobs") submitted a Section 106 Review ("Review") for the entire Holloway-Knox 138kV Transmission Line in August 2020. The Review examined the records available through the Ohio Historic Preservation Office's ("OHPO") online mapping database within 1 mile of the transmission line. As currently designed, all the preliminary off ROW access roads are within the 1-mile study area. The results of the search are shown in Exhibit 12. The results are summarized below.

A review of the records available through the OHPO online mapping system identified 10 OHI-listed resources, 5 cemeteries, and 24 OAI-listed archaeological sites have been

inventoried within one mile of the Project area. Additionally, 9 previous archaeological investigations have been documented within one mile of the Project. There are no National Register of Historic Places (NRHP) resources within one mile of the Project. No OAI-listed archaeological sites are within the Project ROW. In addition, no cemeteries are in the Project ROW.

Four previous archaeological surveys intersect the Project ROW. All four previous archaeological investigations intersecting the Project ROW are associated with pipeline construction projects.

Based upon this review, the Project will not impact historic properties. Since the Project will rebuild an existing line, no increases to the line's visibility are anticipated. The results of the review are shown in Exhibit 13. Consequently, Jacobs recommends that no further archaeological investigations are necessary.

### 4906-6-05 (B)(10)(d): Local, State and Federal Government Requirements

Table 4 shows the list of government agency requirements and the application status at the time of filing.

Agency	Permit Requirement	Status
Ohio Environmental Protection Agency (OEPA)	General NPDES Construction Storm Water Permit OHC000005	To be filed
Carroll and Harrison County Soil and Water Conservation District	Storm Water Pollution Prevention Plan (SWP3) – Review Application	To be filed
Carroll and Harrison Counties	Floodplain Development Review	To be filed
Ohio Department of Transportation; Carroll and Harrison County; Perry, Rumley, and Archer Townships	Driveway Entrance Permits (MR 505, Driveway Permit for Construction within the County Right-of-Way Limits)	To be filed
Ohio Department of Transportation; Carroll and	Roadway Occupancy Permits and Reviews (MR 505, Use of County	To be filed

Table 4. List of Government Agency Requirements to be Secured Prior to Construction

Harrison County; Perry, Rumley, North, and Archer Townships	Right of Way Permit, Permit for User of County Highway ROW)	
Carroll and Harrison County; Perry, Rumley, North, and Archer Townships	Special Hauling Permit and Road Use Maintenance Agreement (RUMA)	To be filed
Columbus & Ohio River Railroad	Railroad Crossings Permits	To be filed

### 4906-6-05 (B)(10)(e): Endangered, Threatened, and Rare Species Investigation

Jacobs, on behalf of ATSI, submitted a request to the ODNR to conduct an Environmental Review of the entire Holloway-Knox 138kV Transmission Line. As part of the Environmental Review, the ODNR conducted a search of the ODNR Division of Wildlife's Natural Heritage Database to research the presence of any endangered, threatened, or rare species within one (1) mile of the Project area. The ODNR's response on June 1, 2020 stated that the Natural Heritage Database had two (2) state endangered species, two (2) state threatened species, one (1) state species of concern, and a mussel bed, within a one (1) mile radius of the Project area. The Division of Wildlife found that within range of the Project area, there is one (1) state and federally endangered species, one (1) state endangered and federal species of concern, three (3) state endangered species, and four (4) state threatened species. A copy of ODNR's response is included as Exhibit 14.

Jacobs also submitted a request to the USFWS for an Ecological Review on March 31, 2020 to research the presence of any endangered, threatened, or rare species within one (1) mile of the entire Holloway-Knox 138kV Transmission Line. A copy of USFWS's Ecological Review response is included as Exhibit 15. The USFW's response on April 13, 2020 indicated the federal and state endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*) are within the range of the Project. A list of all endangered, threatened, and rare species, as identified by ODNR and USFWS, is provided in Table 5.

Common Name	Scientific Name	Federal Listed Status	State Listed Status	Affected Habitat
Mammals		-		
Indiana bat	Myotis sodalis	Endangered	Endangered	Trees and forests
Northern long-eared bat	Myotis septentrionalis	Threatened	Threatened	Trees and forests
Birds				
American bittern	Botaurus lentiginosus	NA	Endangered	Bogs, meadows, and swamps
Least bittern	Ixobrychus exilis	NA	Threatened	Dense emergent marshlands or wetlands
Upland sandpiper	Bartramia longicauda	NA	Endangered	Grasslands
Northern harrier	Circus cyaneus	NA	Endangered	Marshes and grasslands
Sharp-shinned hawk	Accipiter striatus	NA	Species of Concern	Forests and agricultural
Barn owl	Tyto alba	NA	Threatened	Forests and agricultural
Amphibians		4	•	
Eastern hellbender	Cryptobranchus alleganiensis	Species of Concern	Endangered	Streams
Mussels	<u>-</u>	1		-
Threehorn wartyback	Obliquaria reflexa	NA	Threatened	Rivers
Fish				
Tippecanoe darter	Etheostoma tippecanoe	NA	Threatened	Rivers and streams
Channel darter	Percina copelandi	NA	Threatened	Lakes and rivers
Plants				
Drummond's aster	Symphyotrichum drummondii	NA	Threatened	Forest openings

### Table 5. List of Endangered, Threatened, and Rare Species

The response from ODNR and USFWS indicated that the Project is within range of the federal and state endangered Indiana bat and the federal and state threatened Northern long-eared bat. Within the Project disturbance area, tree clearing will be conducted between October 1st and March 31st to avoid impacts to these species. Therefore, no adverse effects to these species are anticipated.

The response from ODNR indicated the Project is within the range of numerous aquatic species as referenced in Table 5. No impact to these species is expected because no instream work is proposed.

The response from ODNR indicated the Project is within range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Impacts to dry grasslands, including native grasslands, seeded grasslands, hayfields, and grazed and un-grazed pastures, should be avoided during the nesting period of April 15th to July 31st.

The response from ODNR indicated the Project is within range of the northern harrier (*Circus cyaneus*), a state endangered bird. Impacts to large marshes and grasslands should be avoided during the nesting period of May 15th to August 1st.

The response from ODNR indicated the Project is within range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Impacts to bogs and large wet meadows should be avoided during the nesting period of May 1st to July 31st.

The response from ODNR indicated the Project is within range of the Least bit tern (*Ixobrychus exilis*), a state threatened bird. Impacts to inland marshes and dense emergent wetlands should be avoided during the nesting period of May 1st to July 31st.

The response from ODNR Ohio Natural Heritage Database indicated the Sharp-shinned hawk (*Accipiter striatus*), a state species of concern bird, and the barn owl (*Tyto alba*), a state threatened bird, have been observed within one-mile of the project area. No sightings or nests of these species were observed during the environmental surveys of the Project.

The response from ODNR Ohio Natural Heritage Database indicated the Drummond's aster (*Symphyotrichum drummondii*), a state threatened plant, has a recorded observation

in a wooded area located 0.5-mile to the east of this section of line in Harrison County. No general observations of this species were recorded during the environmental surveys of the Project.

Jacobs is presently mapping the various habitats within the Project's disturbance area to identify any areas of concern relating to the above-listed species. Coordination with ODNR will continue to evaluate appropriate avoidance and minimization measures, including by not limited to sequencing construction activities to address seasonal restrictions to reduce potential impact.

### 4906-6-05 (B)(10)(f): Areas of Ecological Concern

As part of the investigation, the ODNR and the USFWS provided responses regarding the presence of unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forest, national wildlife refuges, or other protected natural areas within one (1) mile of the project area. A copy of ODNR's response is included as Exhibit 14. The USFW's response on April 13, 2020 indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project area. A copy of USFWS's Ecological Review response is included as Exhibit 15.

Jacobs conducted a wetland and stream delineation of the Project. Jacobs' assessment focused on the approximately 9-miles of existing 100-foot cleared corridor that starts in Carroll County, near the intersection of Pomona Road and Amsterdam Road SE, and extends south to Harrison County, near the intersection of Keyser Road and Lower Clearfork Road, as shown on the Overview Maps (Exhibits 1 and 2).

Jacobs conducted the environmental survey of the Project May through October 2018. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project environmental survey corridor (ESC) and are depicted on Figures 3-A to 3-AH of Exhibit 16,, a copy of the wetland and waterbody delineation report. The 25 wetlands totaling 2.19 acres within the ESC were all categorized as PEM. Of the 25 wetlands, 18 wetlands were identified as Category 1 wetlands and seven wetlands were identified as Category 2 wetlands. No Category 3 wetlands were identified within the ESC. Categories were based

on the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method (ORAM) scores, which were scored on a variety of factors such as size, surrounding land use, disturbance, invasive species, and vegetation growth. The 34 streams, totaling 6,198 linear feet within the ESC, included 17 ephemeral streams, 13 intermittent streams, and four perennial streams. Three streams were assessed using the OEPA's Qualitative Habitat Evaluation Index (QHEI) methodology and 31 streams were assessed using the OEPA's Headwater Habitat Evaluation Index (HHEI) methodology. Additionally, two ponds were identified within the ESC that total 0.07 acres.

All streams will be crossed above the ordinary high-water mark to avoid impacts and no in-stream work is proposed for the Project. Additionally, ATSI will utilize best management practices to avoid any indirect impact to streams and wetlands through its use of erosion and sediment controls. Streams will either be avoided or bridged (no work below the ordinary high-water mark), and wetlands will be traversed using low ground pressure equipment and/or matting. Jacobs has made preliminary determinations concerning the likely jurisdiction of all assessed features; however, the United States Army Corps of Engineers ("USACE") will make the final determination. Further coordination with the USACE will occur, if necessary, prior to the submittal of any permit or commencing construction activities.

The results of the environmental resource survey described in this report conducted by Jacobs are limited to what was identified within the ESC and depicted in Figures 3-A to 3-AH of Exhibit 16. The information contained in this wetland and waterbody delineation summary is for a study area that may be larger than the actual Project limits-of-disturbance for construction; therefore, lengths and acreages listed above may likely not constitute the actual impacts of the Project at the time of construction. If permits are necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

Additionally, a review of the online FEMA Flood Insurance Rate Mapping was performed. FEMA floodplain mapping can be found within the wetland and waterbody delineation report in Exhibit 16. Consultation with Carroll and Harrison counties is required for floodplain development review.

### 4906-6-05(B)(10)(g): Other Information

Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the NESC as adopted by the PUCO and will meet all applicable safety standards established by the Occupational Safety and Health Administration.

No other or unusual conditions are expected that will result in significant environmental, social, health or safety impacts.

### <u>4906-6-07: Documentation of Letter of Notification Transmittal and Availability for</u> Public Review

This Letter of Notification is being provided concurrently with its docketing with the Board to the following officials:

### **Carroll County**

Board of County Commissioners Mr. Jeffery Ohler 119 South Lisbon Street, Suite 201 Carrollton, OH 44615

Board of County Commissioners Mr. Robert Wirkner 119 South Lisbon Street, Suite 201 Carrollton, OH 44615

Board of County Commissioners Mr. Christopher Modranski 119 South Lisbon Street, Suite 201 Carrollton, OH 44615

### Perry Township

Mr. Eric Horn Perry Township Trustee 154 Amsterdam Road SW Scio, OH 43988 Carroll County Engineer's Office Mr. Brian Wise 200 Kensington Road Northeast Carrollton, OH 44615

Carroll County Regional Planning Commission Mr. Tom Konst, Director 119 South Lisbon Street, Suite 201 Carrollton, OH 44615

Carroll County Soil & Water District Ms. Amanda Tubaugh, District Admin. 613 High Street Northwest #2 Carrollton, Ohio 44615

Mr. Don Leggett, II Perry Township Trustee 154 Amsterdam Road SW Scio, OH 43988 Mr. Gary Staten Perry Township Trustee 154 Amsterdam Road SW Scio, OH 43988

### Harrison County

Mr. Isaac Paul Coffland Harrison County Commissioner 19 Country Club Mnr Cadiz, OH 43907

Mr. Dale Ray Norris Harrison County Commissioner 700 Deersville Ave Cadiz, OH 43907

Mr. Don R. Bethel Harrison County Commissioner 688 Kerr Ave Cadiz, OH 43907 Ms. Marcia Trushel Perry Township Fiscal Officer 154 Amsterdam Road SW Scio, OH 43988

Mr. Douglas Nelson Bachman, P.E., P.S. Harrison County Engineer 86407 North Bay Rd Scio, OH 43988

Ms. Keila Ferguson, District Program Administrator Harrison County Soil & Water Conservation District 538 North Main St Cadiz, OH 43907

Mr. Nick Homrighausen Executive Director, Harrison County Community Improvement Corporation 538 N Main St Cadiz Oh 43907

### **Rumley Township**

Mr. Damian Nathan Kovarik Rumley Township Trustee 88375 Fairview Rd Jewett, OH 43986

Mr. Kevin Larbaugh Rumley Township Trustee 89170 Hauber Rd Jewett, OH 43986

### Archer Township

Mr. Matthew Scott Dulkoski Archer Township Trustee 44690 Jewett Hopedale Rd Fewett, OH 43986 Mr. Andrew Lee Rumley Township Trustee 206 W High St, P.O. Box 239 Jewett, OH 43986

Ms. Barbara J. Birney Rumley Township Fiscal Officer 41771 Rumley Rd East Jewett, OH 43986

Mr. Troy Blackburn Archer Township Trustee 87329 Brair Rd Jewett, OH 43986 Mr. Aaron L. Dodds Archer Township Trustee 83510 Bakers Ridge Rd Cadiz, OH 43907

### <u>Libraries</u>

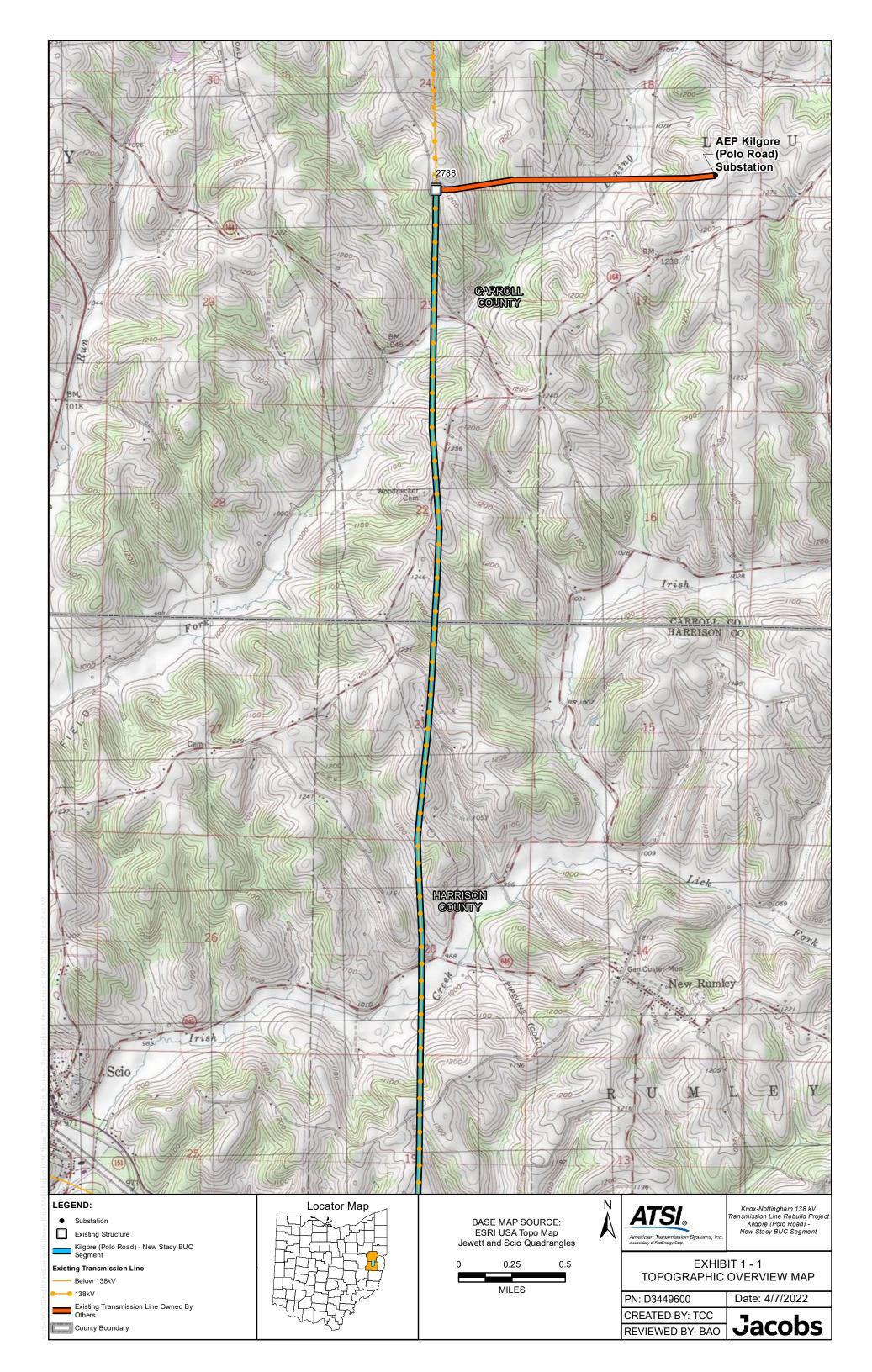
Carroll County District Library Ellen Finnicum, Director 70 2nd Street Northeast Carrollton, OH 44615 Mr. Robert J. Positano Archer Township Fiscal Officer 84624 Cadiz Fewett Rd Cadiz, OH 43907

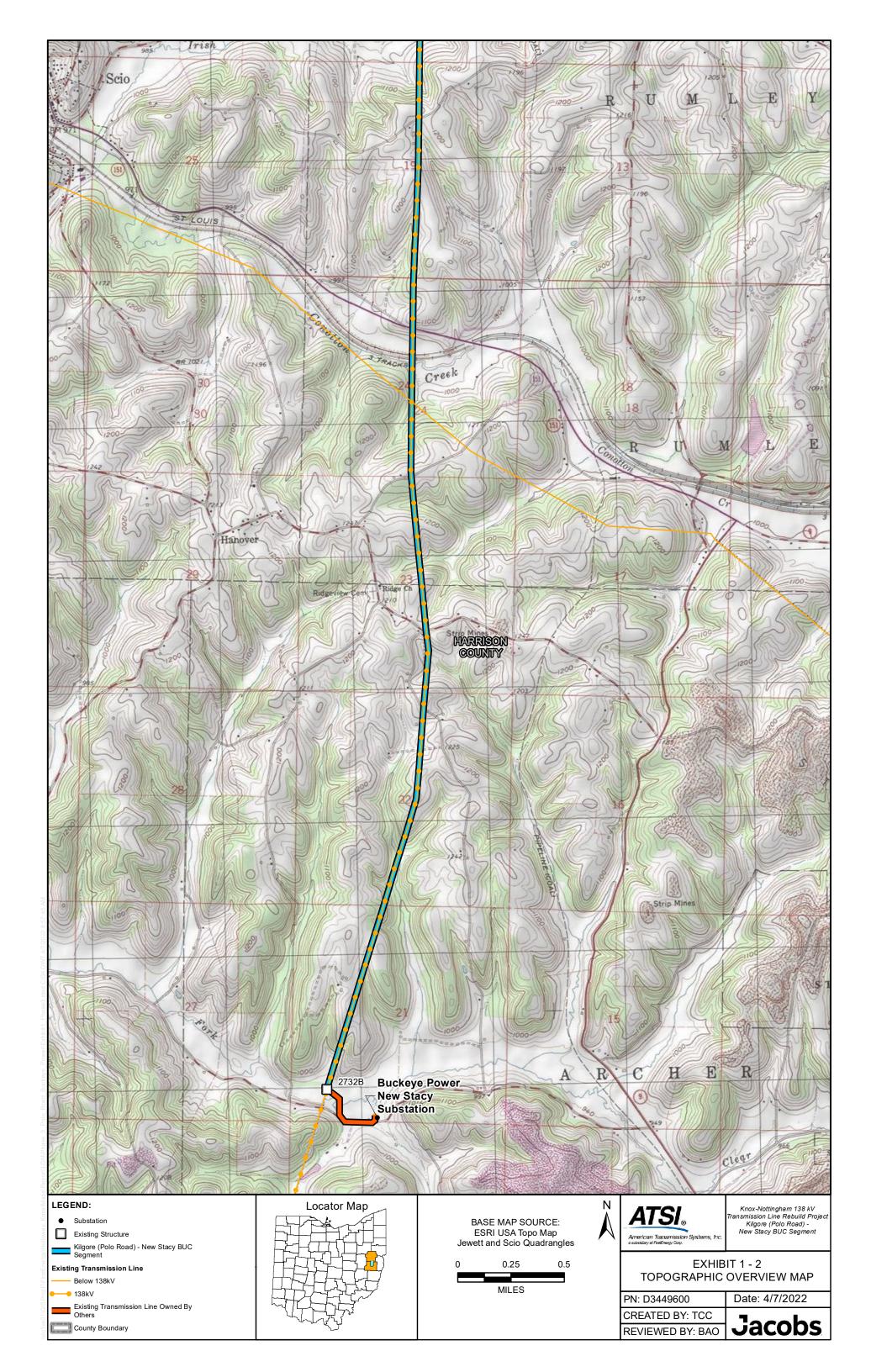
Scio Branch Library Ms. Sandy Thompson, Director 331 W. Main St Scio, OH 43988

Copies of the transmittal letters to these officials have been included with this application as proof of compliance under OAC Rule 4906-6-07 (B) to provide the Board with proof of notice to local officials as required by OAC Rule 4906-6-07 (A)(1) and to libraries per OAC Rule 4906-6-07 (A)(2).

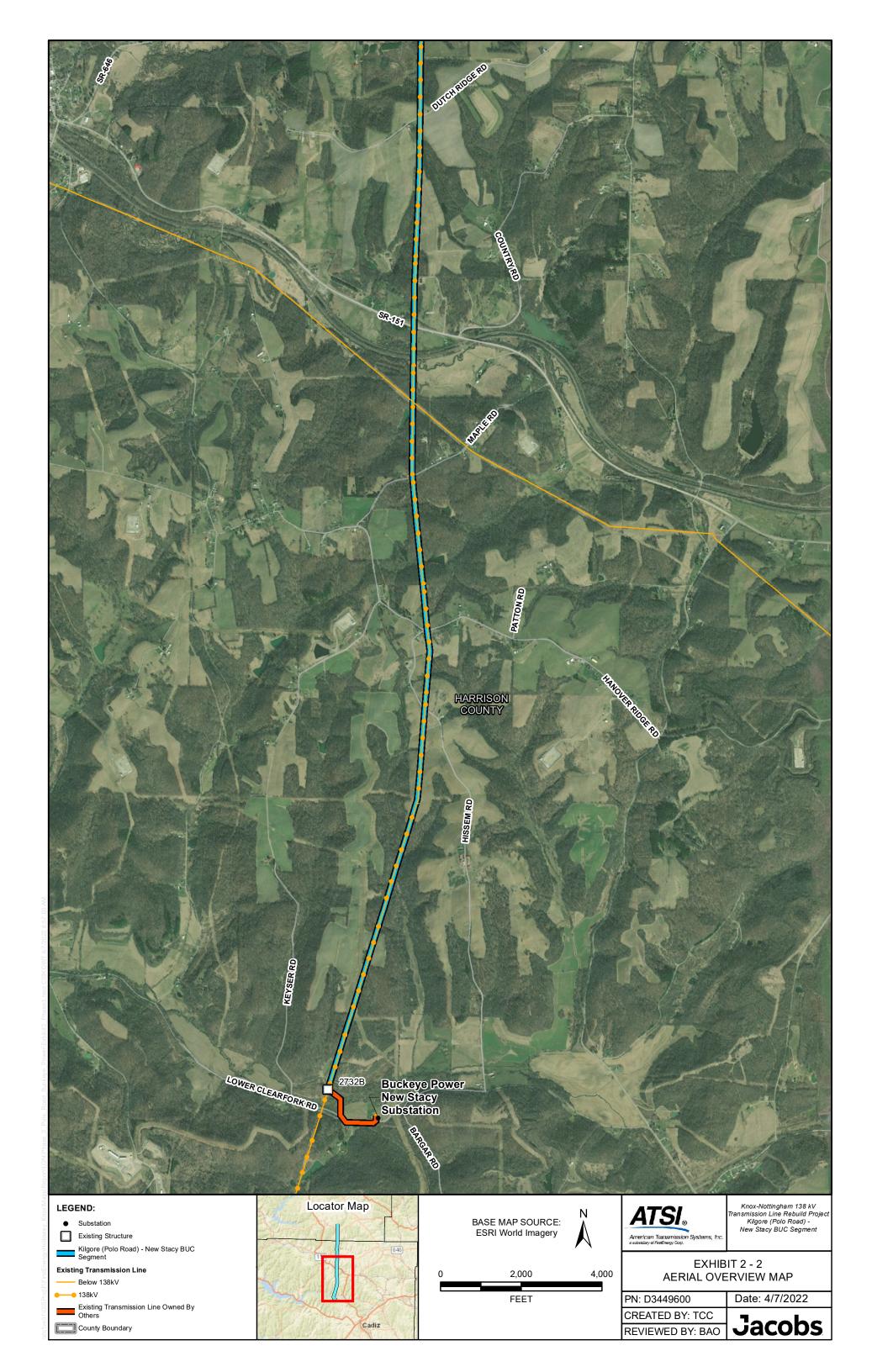
Information is posted at:

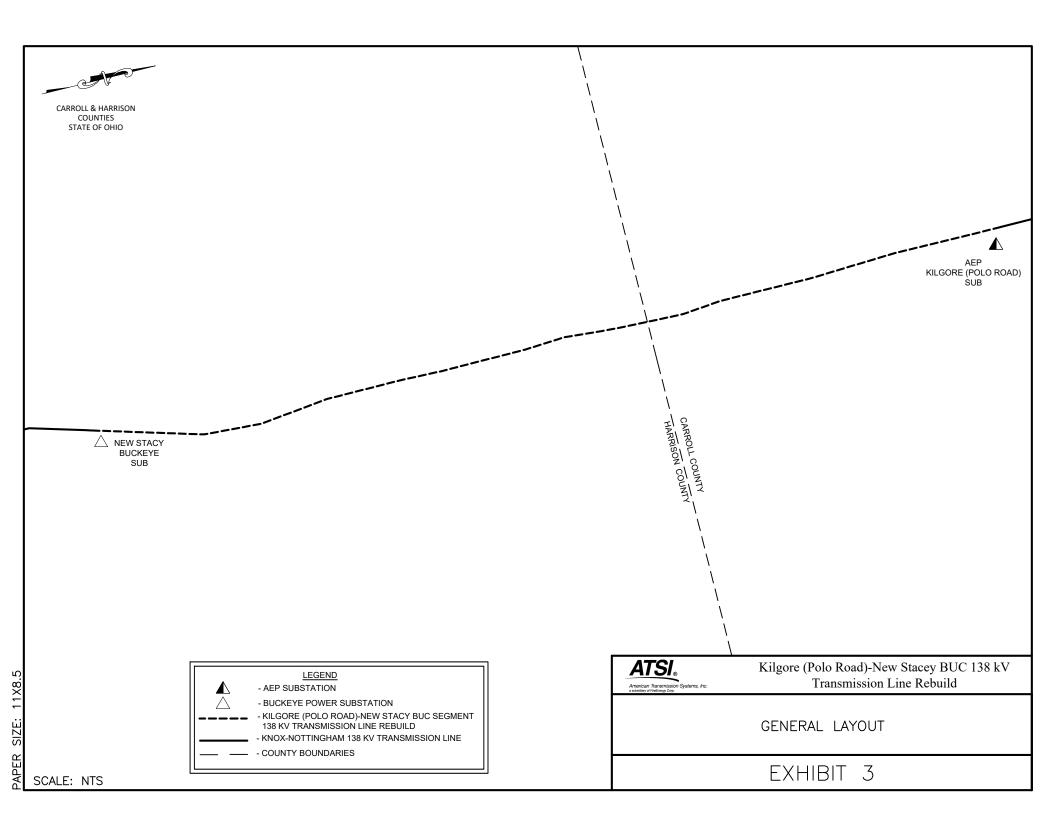
www.firstenergycorp.com/about/transmission\_project/ohio.html on how to request an electronic or paper copy of this Letter of Notification application. The link to this website is being provided to meet the requirements of OAC Rule 4906-6-07 (B) and to provide the Board with proof of compliance with the notice requirements in OAC Rule 4906-6-07 (A)(3).











## Previously Presented: 8/31/2018 SRRTEP

Problem Statement (Scope and Need/Drivers)

Equipment Material Condition, Performance and Risk

- Improve system reliability ad performance
- Remove obsolete and deteriorated equipment
  - 53 to 82 year old construction
  - -57%-83% inspection rejection rate
  - Approximately 29 repair records over the past 3 years; increasing trend
  - 529 active repair conditions; negative increase in maintenance findings
- Upgrade to current standards
- Support shale gas load growth area; multiple (6) transmission service connections

### Potential Solution:

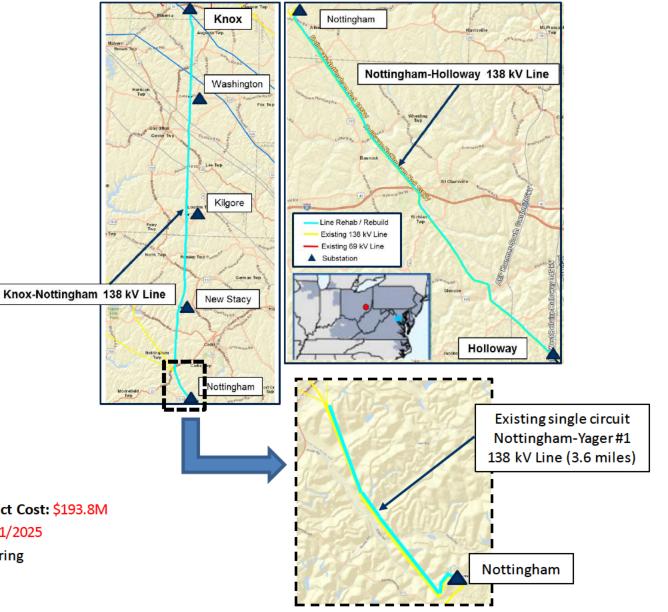
### Holloway-Nottingham-Knox 138 kV Line Rebuild (s1718)

- Rebuild the existing Knox-Nottingham 138 kV Line (Approximately 44 miles).
- Rebuild the existing Nottingham-Holloway #1 138 kV Line (Approximately 21 miles)
- Existing Conductor: Mixed conductor 795 ACSR & 477 ACSR
- Future Conductor: 795 ACSR
- Old Rating 158 MVA SN New Rating 275 MVA SN
- Rebuild the existing Nottingham-Holloway #2 138 kV Line (Approximately 21 miles) sharing a structure with the Nottingham-Holloway #1 138 kV Line
- Old Rating 200 MVA SN New Rating 275 MVA SN
- Rebuild a portion of the Nottingham-Yager #1138 kV Line (Approximately 3.6 miles) sharing a structure with the Knox-Nottingham 138 kV Line
- Old Rating 200 MVA SN New Rating 275 MVA SN

Alternatives Considered: Maintain existing condition

Estimated Project Cost: \$193.8M Project ISD: 5/31/2025 Status: Engineering

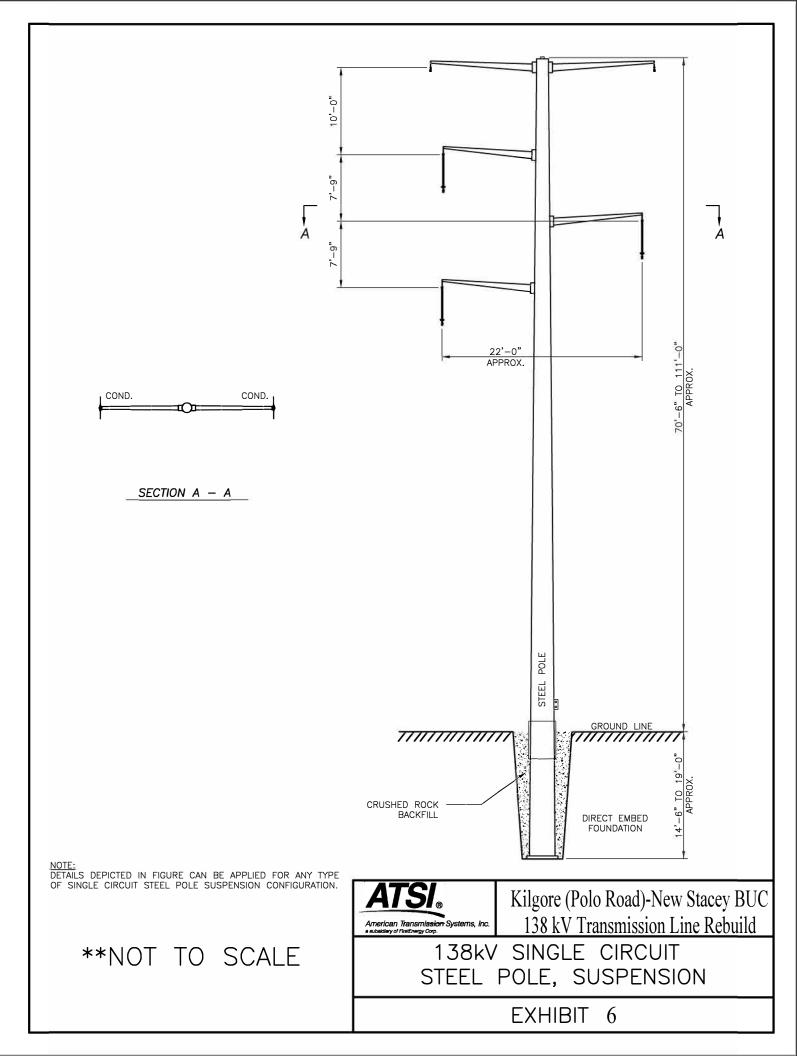
# ATSI Transmission Zone Holloway-Nottingham-Knox 138 kV Line

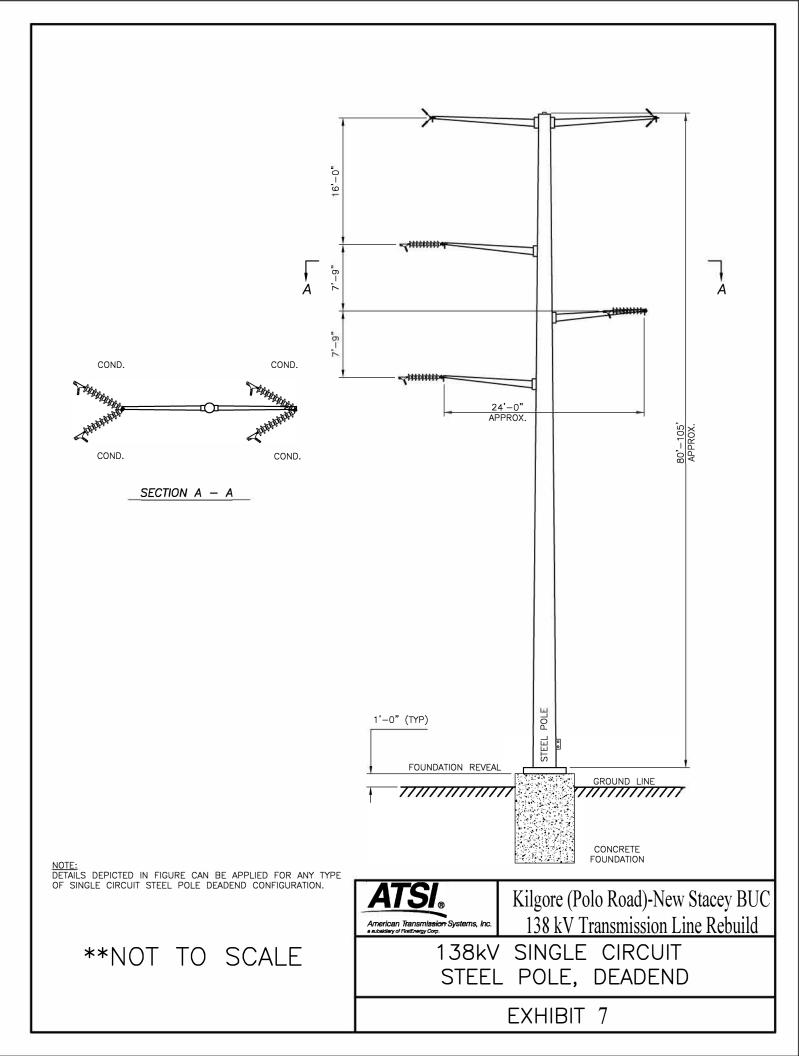


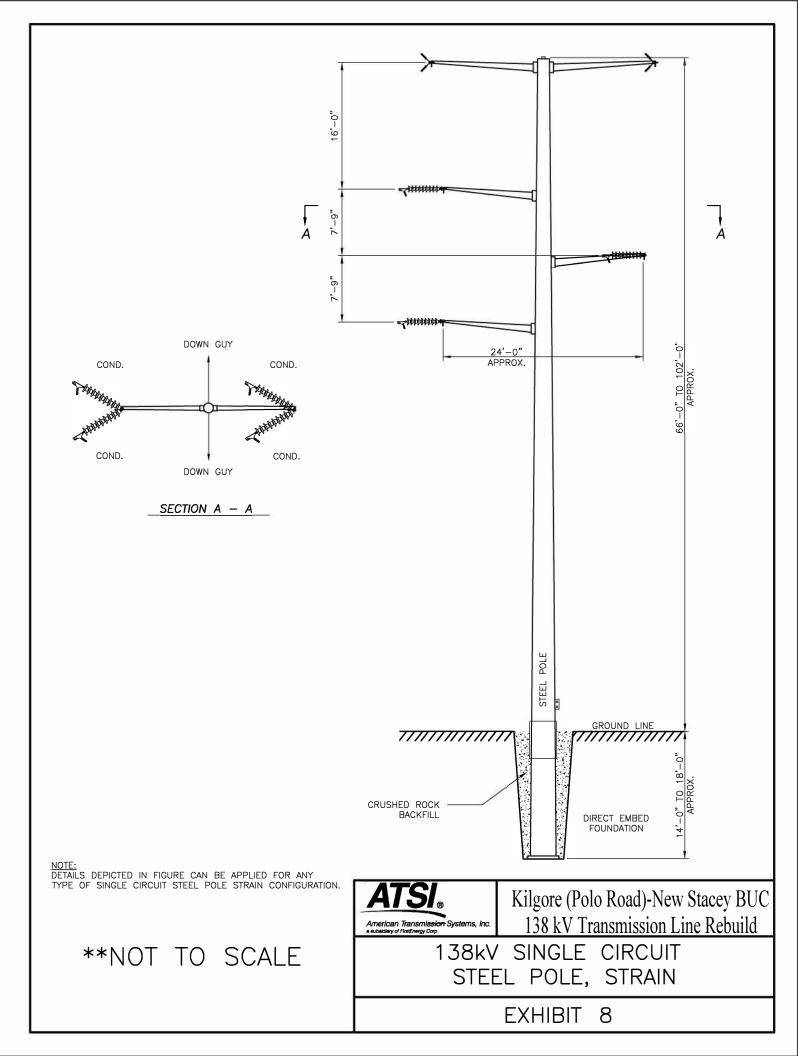
### Exhibit 5 Property Owner List and Agricultural Land Knox-Nottingham 138 kV Transmission Line Rebuild Project - Kilgore (Polo Road)-New Stacy Buc Segment Case Number 22-0285-EL-BLN

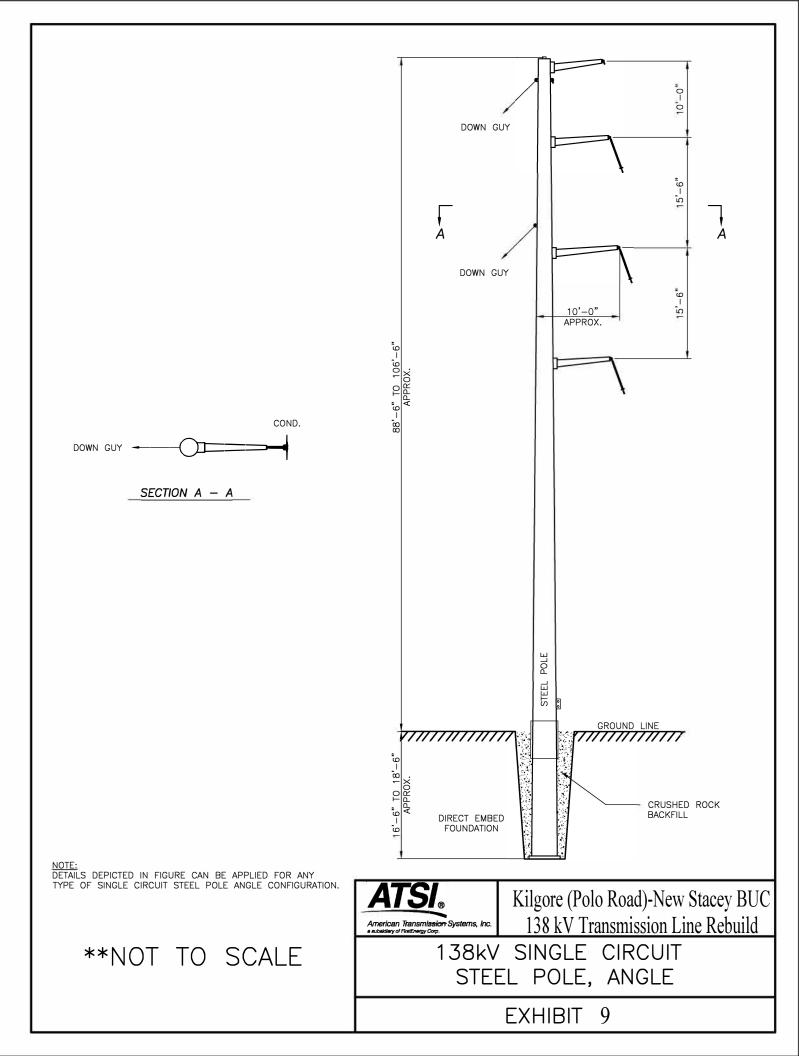
**Agricultural District Agricultural District Parcel Number** Acreage Easement Status (Yes/No) Expiration Year **Notification for Impacted Parcels Only** N/A 230000133001 0.070 Existing No Existing 230000131001 9.930 No N/A 4.05 010000564002 Existing No 221.02 N/A 010000345000 Existing No 010000161000 Existing Yes 2025 326.580 010000471000 36.470 2025 Existing Yes 230000290000 49.810 Existing No N/A 010000579000 0.50 N/A Existing No 280001144000 N/A 42.00 Existing No 280001145000 168.00 Existing No N/A 230000726001 117.39 Existing No N/A 230000725000 0.600 Existing No N/A 230000360000 3.36 Existing No N/A 230000061000 144.00 Existing No N/A 230000062000 71.79 Existing N/A No 230000146000 234.96 Existing No N/A 230000178000 80.00 Existing No N/A 230000179000 10.00 Existing 280000382000 8.75 Existing No N/A 280000383000 73.015 Existing No N/A Yes 2027 280000378000 79.62 Existing 010000236000 19.29 Existing N/A No 230000801000 Existing No N/A 1.46 230000802000 1.46 Existing No N/A Existing No N/A 1.46 230000798000 1.46 Existing No N/A 230000799000 Existing 1.46 No N/A 230000800000 4.06 Existing No N/A

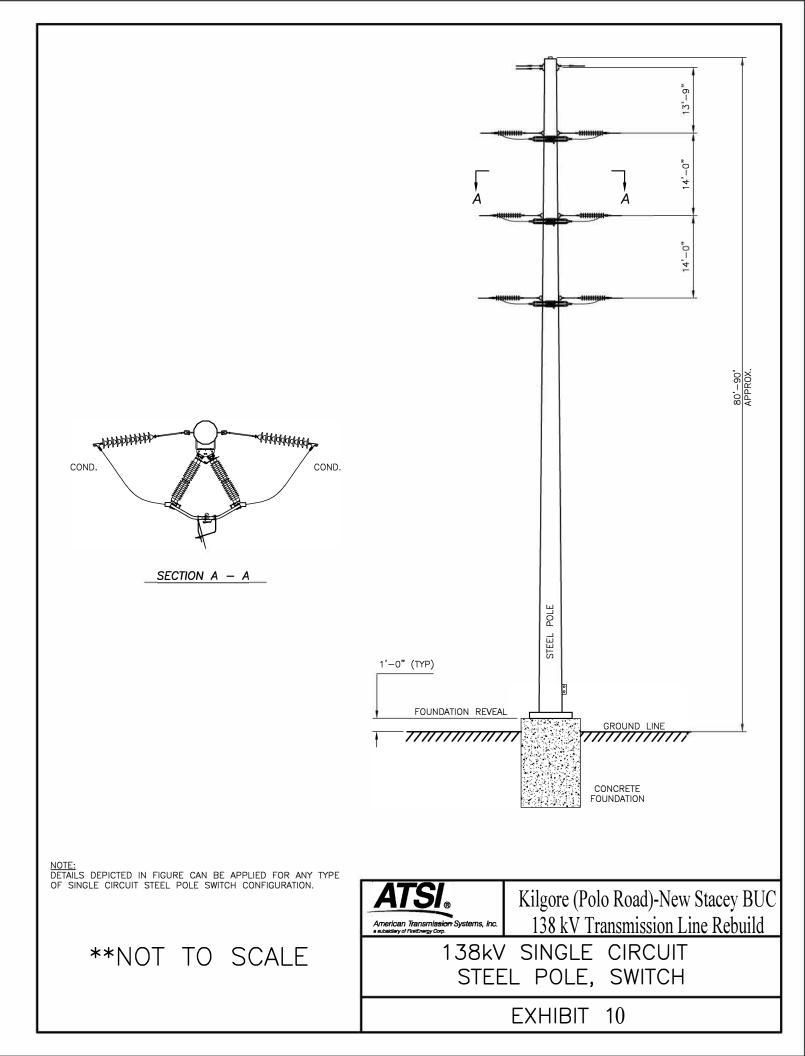
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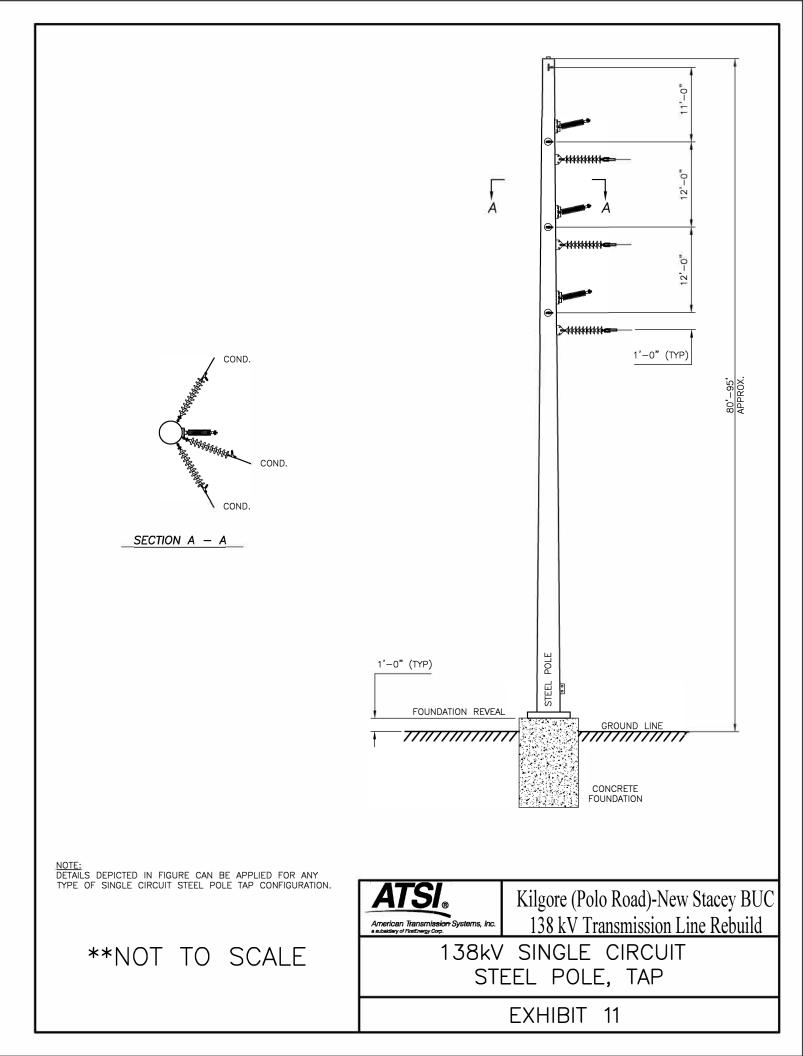


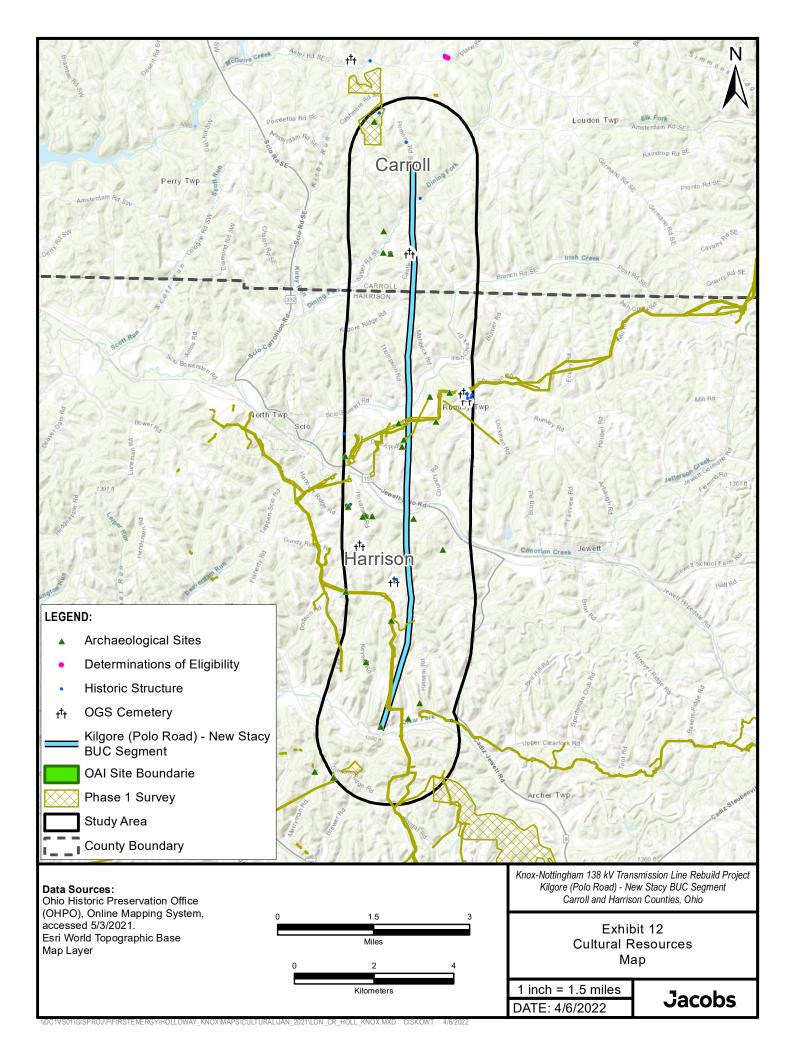














In reply refer to: 2020-MLT-49294

September 16, 2020

Amy C. Favret, M.A., RPA Jacobs 2 Crowne Point Court, Suite 100 Cincinnati, Ohio 45241

RE: Section 106 Review-Holloway-Knox 138kV Transmission Line Rebuild Project, Belmont, Carroll, Columbiana, and Harrison Counties, Ohio

Dear Ms. Favret:

This letter is in response to the correspondence received on August 17, 2020 regarding the proposed 64mile long Holloway-Knox 138kV Transmission Rebuild Project in Belmont, Carroll, Columbiana, and Harrison Counties, 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 proposed project will entail replacing the existing H-frame wood poles with direct embedded steel and drilled shaft H-frame wood poles. The new poles will be installed approximately 10-ft. from the existing poles within the 100-ft. wide right-of-way (ROW). All work will be within the existing ROW except for access roads, which will use existing roads, driveways, or farm lanes. Four pull pads, totaling 0.26-acres, will extend outside of the existing ROW.

A literature review report, *Holloway-Knox 138kV Transmission Line Project, Belmont, Carroll, Columbiana, and Harrison Counties, Ohio* was completed for the entire 64-mile rebuild project. A total of two National Register of Historic Places (NRHP)-listed properties, 165 Ohio Historic Inventory (OHI) properties, two NRHP eligible properties, 43 cemeteries, and 224 Ohio Archaeological Inventory (OAI) sites were identified within the 1.0-mile study area. Of these, one cemetery (Bird/Byrd Cemetery-OGS ID 1381) and two OAI sites (33CO257 and 33CO258) were determined to be within the project ROW. Additionally, one historic architecture survey and 11 Phase I archaeological surveys overlap portions of the ROW.

Sites 33CO257 and 33CO258 are low-density prehistoric lithic scatters previously identified during one of the Phase I surveys. Neither of these sites are near existing poles. Site 33CO257 was recommended for further work, but to date, no additional work has been conducted at the site. As a precautionary measure, a 50-ft. buffer using construction fencing will be placed around site 33CO257 during construction. The Bird/Byrd Cemetery is approximately 151-ft. south of the nearest pole and therefore will not be impacted by the project. Since this cemetery is within the ROW, it is recommended that a 50-ft. buffer using construction fencing also be put up around the cemetery during construction as a precautionary measure.

Due to the nature of the project as a rebuild, it is Jacob's recommendation that no further archaeological or architectural investigations are necessary as the visibility of the existing transmission line should not increase. Our office agrees with this recommendation.

2020-MLT-49294 September 16, 2020 Page 2

Based on the information provided, we agree that the project, as proposed, will have no effect on historic properties. No further coordination is required for this project unless the scope of work changes or archaeological remains are discovered during the course of construction. In such a situation, this office should be contacted as required by 36 CFR § 800.13. If you have any questions, please contact me by e-mail at <u>sbiehl@ohiohistory.org</u> or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Steph M. Biell

Stephen M. Biehl, Project Reviews Coordinator (archaeology) Resource Protection and Review State Historic Preservation Office

cc: Joy Williams, SHPO

RPR Serial No. 1085225

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

## 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

June 1, 2020

Ben Otto Jacobs 400 E. Business Way, Suite 400 Cincinnati, Ohio 45241

Re: 20-383; Request No. 18-182; Holloway-Knox 138 kV Transmission Line Rebuild Project

**Project:** The proposed project involves replacing existing wood h-frame structures of the 138-kV electric transmission line with a combination of new direct embedded steel and drilled shaft H-frame wood pole structures within the existing and maintained 100-foot wide right-of-way.

**Location:** The proposed project is located in Columbiana, Carroll, Harrison, and Belmont Counties, 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 the following records at or within a one-mile radius of the project area:

The Natural Heritage Database has data within the project area, given in the attached shapefiles. The review was based on the project area specified in the request and performed using the shapefile provided to us. Records searched date from 1980. This data is provided to inform you of features present within the project area. Additional comments on some of the features may be found in pertinent sections below.

Records included in the data layer may be for rare plants and animals, geologic features, high quality plant communities, and other ecological features. Fields included are scientific and common names, state and federal statuses (when applicable), date of most recent observation, and whether the record is located within a managed area or conservation site.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal

endangered, FT = federal threatened, FSC = federal species of concern, and FC = federal candidate species.

There are a few species considered as sensitive for which we do not give out an exact location. They are not within the data layer but are included in the sensitive species data layer which shows a general location.

The managed areas layer shows boundaries for state, federal, county, non-profit, private and sites under other types of ownership that are protected and managed for their natural resources. Please be aware that this layer may not be complete, and we are continually updating it as additional information becomes available to us.

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 project is within the range of the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (Carya ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraxinus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Quercus imbricaria), northern red oak (Quercus rubra), slippery elm (Ulmus rubra), American elm (Ulmus americana), eastern cottonwood (Populus deltoides), silver maple (Acer saccharinum), sassafras (Sassafras albidum), post oak (Ouercus stellata), and white oak (Ouercus alba). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. 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 occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. The DOW understands that there is no in-water work proposed for this project. Therefore, this project is not likely to impact this or other mussel species.

The project is within the range of the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, and the channel darter (*Percina copelandi*), a state threatened fish. The DOW understands that there is no in-water work proposed for this project. Therefore, this project is not likely to impact these or other aquatic 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 upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), 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.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of 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 <u>Sarah.Tebbe@dnr.state.oh.us</u> if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator (Acting) 

 From: Ohio, FW3 <ohio@fws.gov>
 EX

 Sent: Monday, April 13, 2020 12:49 PM

 To: Otto, Ben/CIN <Ben.Otto@jacobs.com>

 Subject: [EXTERNAL] ATSI Holloway-Knox 138 kV Transmission Line Rebuild Project, Columbiana, Carroll, Harrison, and Belmont Counties, Ohio



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 03E15000-2018-TA-0404

Dear Mr. Otto,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees  $\geq$ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, 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, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that 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.

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.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the 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 Ohio Field Office Supervisor

# Wetland and Waterbody

# **Delineation Report**

Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project

Harrison and Carroll Counties, Ohio

Prepared for



American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.

May 2020



Jacobs Engineering Group, Inc. 2 Crowne Point Court, Suite 100 Cincinnati, OH, 45241

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- B Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands (ORAM) Datasheets
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- D OEPA Primary Headwater Habitat Evaluation Index (HHEI) Datasheets
- E Jacobs Open Water/Pond Data Forms
- F Representative Photographs

# Acronyms and Abbreviations

ATSI	American Transmission Systems Inc.
CWA	Clean Water Act
ESC	Environmental Survey Corridor
°F	Fahrenheit
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
Jacobs	Jacobs Engineering Group, Inc.
kV	Kilovolt
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OBL	Obligate wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High-Water Mark
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine emergent
PFO	Palustrine forested
Project	Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project
PSS	Palustrine scrub-shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
TNW	Traditionally navigable water
UPL	Upland
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

iii

# **1** Introduction

This wetland and waterbody delineation report (Report) summarizes the results of the wetland and waterbody delineation surveys conducted in Carroll and Harrison Counties, Ohio by Jacobs Engineering Group, Inc. (Jacobs), for American Transmission Systems Inc. (ATSI), a subsidiary of FirstEnergy Corporation (FirstEnergy). ATSI is proposing to replace existing wooden h-frame structures with new direct embedded steel and drilled shaft H-frame wood pole structures as part of the Polo Road-Buckeye Power 138 kilovolt (kV) Transmission Line Rebuild Project (Project). The Project (approximately 8.9 miles long) is the middle section of a larger 64-mile project originating at the Knox Substation in Columbiana County, near the intersection of Township Line Road and Knox School Road, north of the City of Chambersburg, and extending south to the Holloway Substation terminus in Belmont County, southeast of the City of St. Clairsville. The larger 64-mile project is broken down into five phases, of which the Project is Phase 3.

The Project starts in Carroll County, near the intersection of Pomona Road and Amsterdam Road SE, and extends south to Harrison County, near the intersection of Keyser Road and Lower Clearfork Road, as shown on Overview Figure (Figure 1). Jacobs conducted environmental surveys in May through October 2018. The environmental survey corridor (ESC) included the existing 100-foot right-of-way (ROW), potential access routes, and pull pads.

This wetland and waterbody delineation report contains the following components:

- Figure 1 provides an overview map of the ESC overlain on ArcGIS Online USA topographic maps.
- Figures 2-A to 2-AH show U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) mapped soil units, the location of National Wetland Inventory (NWI) polygons, national hydrography dataset (NHD) streams, and Federal Emergency Management Agency (FEMA) 100-year floodplain and floodway information. Table 3-1 lists the soils types identified within the ESC and Table 3-2 list the NWI wetland types identified within the ESC.
- Figures 3-A to 3-AH provide the location of all features mapped during the delineation by Jacobs biologists within the ESC. This includes all wetlands, data points, waterbodies, and ponds. Tables 4-1 (wetlands), 4-2 (streams), 4-3 (ponds) follow the text, and provide detailed information for all delineated features within the ESC. Tables 4-4 (wetlands), 4-5 (streams), and 4-6 (ponds) within the text, provide summary information for all delineated features within the ESC.
- U.S. Army Corps of Engineers (USACE) wetland determination field data forms are in Appendix A.
- Ohio Rapid Assessment Method for Wetlands (ORAM) two-page forms are in Appendix B.
- Primary Headwater Habitat Evaluation Index (HHEI) stream data forms for each stream identified with a drainage area less than 1 square mile are in Appendix C.
- Qualitative Habitat Evaluation Index (QHEI) stream data forms for each stream identified with a drainage area of 1 square mile or greater are in Appendix D.
- Jacobs Open Water/Pond data forms for each open water feature identified within the ESC are in Appendix E.
- Representative photographs for all delineated features within the ESC are in Appendix F.

# 2 Background Information

This section describes the ESC and methodology used during the wetland and waterbody delineation field surveys.

## 2.1 Project Area

The Project is in Harrison and Carroll Counties, Ohio. The ESC begins at the terminus of Phase 2, just north of the intersection of Pomona Road and Amsterdam Road SE (40.456873 latitude, -81.049261 longitude), and extends south to the beginning of Phase 4, just north of the intersection of Keyser Road and Lower Clearfork Road (40.328104 latitude, -81.064962 longitude), as shown in Figure 1. The ESC is approximately 8.9 miles long, 100 feet wide within the Project ROW, and contains multiple proposed off-ROW access routes and pull pads.

Review of the USGS 7.5-minute topographic maps indicates the ESC crosses two USGS 7.5-minute topographic quadrangles: Scio and Jewett. Additional review of the USGS 7.5-minute topographic maps of the area indicates that multiple ditches, streams, and rivers drain the ESC, including Dining Fork, Irish Creek, Conotton Creek, Clear Fork, and multiple unnamed tributaries of these waterways. Topographic relief is comprised of a landscape of rolling hills, with elevations ranging between 925 and 1,270 feet above sea level throughout the ESC (Figure 1).

Land use and natural communities observed within the ESC includes agricultural land, existing ROW, existing roadway, industrial/substation, residential, old field, upland scrub shrub, and palustrine emergent (PEM) wetland, in addition to the previously identified waterbodies.

### 2.1.1 Annual Precipitation

Recent rainfall data for Cambridge, Ohio were reviewed prior to completing the environmental survey to determine if climatic conditions were normal at the time of the survey. Cambridge, Ohio was the nearest weather station with both historical and recent precipitation records. Rainfall recorded in Cambridge, Ohio was above normal for three out of four months prior to and during surveys conducted in May and June (Table 2-1; USDA, 2018). These data suggest climatic conditions were generally wetter than normal for 2018 leading up to the ecological survey. This was taken into consideration during delineation.

2018 Precipitation Data	Mar	Apr	May	Jun	Total
Cambridge Monthly Sum <sup>1, 3</sup>	3.60	5.82	3.86	5.18	18.46
Cambridge Normal Precip. <sup>2, 3</sup>	2.30-3.50	2.29-3.91	2.88-4.65	2.50-4.87	9.97-16.93
Monthly climatic condition	Above Normal	Above Normal	Normal	Above Normal	Above Normal

#### **TABLE 2-1: Recent Precipitation Data**

<sup>1</sup>Monthly weather summary from weather station CAMBRIDGE, OH (2018)

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<sup>2</sup>USDA WETS Station Climate Data 1971-2000 (Cambridge, OH (USDA 2000))

<sup>3</sup>Displayed in inches

### 2.1.2 Drainage Basins

The ESC is within the Tuscarawas (05040001) 8-digit Hydrologic Unit Code (HUC). The ESC crosses four 12-digit HUCs, as outlined in Table 2-2 (USGS, 2018):

Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project					
HUC 12-Digit Code HUC 12-Digit Name					
05040001-07-03	Dining Fork				
05040001-07-02	Irish Creek				
05040001-07-04	Headwaters Middle Conotton Creek				
05040001-15-01	Clear Fork				

Source: USGS 2018

### 2.1.3 Traditional Navigable Waters

The U.S. Environmental Protection Agency (EPA) and USACE assert jurisdiction over "all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce including all waters which are subject to the ebb and flow of the tide" (USACE and EPA, 2008). These waters are considered traditionally navigable waters (TNW). The ESC does not directly cross a TNW, yet many of the streams will be considered tributaries to the Tuscarawas River (USACE, 2009).

# **3** Wetland and Waterbody Delineation

## **3.1 Desktop Review**

Prior to conducting the field investigations, Jacobs reviewed the following resources to identify the potential for wetlands within the ESC:

- Aerial photo-based maps (ArcGIS Online, World Imagery Map, 2020)
- Topographic maps (ArcGIS Online, USA Topo Maps, 2020)
- NRCS Web Soil Survey (NRCS, 2020)
- NWI shapefile (USFWS, 2020)
- National Hydrography Dataset (NHD) (USGS, 2020)

According to the NRCS soil survey of Harrison and Carroll Counties (NRCS, 2018), 30 soil map units are crossed by the ESC. Of the 30 soil map units, zero are listed as hydric, one predominantly hydric, four predominantly non-hydric, and the remaining 25 units are listed as not hydric (Figures 2-A to 2-AH).

Generally, hydric soils are those soils that indicate through their color and structure that they have experienced dominantly reducing (i.e. oxygen poor) conditions. Oxygen-poor conditions result from inundation and/or saturation by water. Partially hydric soils have both hydric and non-hydric soil components identified in the mapped soil unit.

NWI data were obtained from the USFWS for review of potential wetlands that may occur within the ESC. The NWI data (USFWS, 2018) identify the type of wetland or open water present at a location using the USFWS classification system (Cowardin et al., 1979). The NWI data indicated that 12 NWI features (approximately 1 acre) are within the ESC (Figure 2-A to 2-AH): two palustrine unconsolidated bottom (PUBGx) features, six riverine streambed class (R4SBC) features, and four riverine unconsolidated bottom (R5UBH) features (USFWS, 2018). The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. The information on NWI maps is obtained largely from aerial interpretation, may be outdated, and is only sporadically field-checked. Additional detail regarding the mapped NWI wetlands within the ESC is provided in Table 3-2.

Wetland Type <sup>1</sup>	Mapped NWI Features	Acreage within ESC						
Polo Road - Buckeye Power 138 kV Transmission Line Rebuild Project								
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TABLE 3-2: Mapped National Wetland Inventory Features

Wetland Type <sup>1</sup>	Mapped NWI Features	Acreage within ESC
PUBGx	2	0.08
R4SBC	6	0.63
R5UBH	4	0.36
<b>Overall Total</b>	12	1.07

<sup>1</sup>Cowardin et al. 1979.

As shown on the FEMA floodplain panels (Figures 2-A to 2-AH), the ESC crosses the FEMA-mapped 100-year floodplains of three streams (FEMA, 2018):

- Dining Fork (Stream PB-03)
- Irish Creek (Stream PB-12)
- Conotton Creek (Stream PB-16).

## 3.2 Field Survey Methodology

In May through October 2018, Jacobs biologists surveyed the ESC by walking the corridor and evaluating for wetlands and other waters of the U.S. The boundaries of each wetland and waterbody within the ESC were delineated and recorded using handheld global positioning system (GPS) units. For waterbodies identified within the Project area, the ordinary high-water mark (OHWM) was used as the jurisdictional boundary.

Wetland, stream, and pond data were recorded on USACE Regional Supplement wetland determination data forms, Headwater Habitat Evaluation Index (HHEI) forms and Qualitative Habitat Evaluation Index (QHEI) forms, and Jacobs standard open water/pond data forms, respectively. All other land use, habitat, and other supplemental data were collected in a field notebook during the environmental survey.

### 3.2.1 Wetland Delineation

Wetland boundaries were field-delineated according to Section 404 of the Clean Water Act (CWA) and the routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers' Wetlands Delineation Manual* and subsequent guidance documents (USACE, 1987) and according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (USACE, 2012). Wetland delineation data were recorded on the USACE Regional Supplement wetland determination data forms. Representative wetland and upland data points were recorded during the wetland delineation to determine the presence/absence of wetlands and/or document upland conditions within the Project area. Upland data points were determined not to be within wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils.

### 3.2.1.1 Soils

Jacobs biologists examined soils using a hand auger to extract soil cores, which were examined for hydric soil characteristics. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 1988) 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 (USACE, 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, or unmottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered hydric soils.

### 3.2.1.2 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 five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent 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-in. depth is 41 degrees Fahrenheit (°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 soils and ground surface were examined by Jacobs biologists 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, 2011).

### 3.2.1.3 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 2016 National List of Plant Species that Occur in Wetlands: Region 1 (Region 1 encompasses the state of Ohio). 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.

Wetland quality was evaluated using the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA, 2000). Wetlands are scored based on hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v5.0 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 a transitional zone, it must be given the higher Category unless scientific data can prove it should be in a lower category (Mack, 2001).

According to recent guidance from the USEPA and USACE, wetlands that are adjacent to or have a significant nexus to TNWs are regulated under Sections 401 and 404 of the CWA (USEPA and USACE, 2008). A significant nexus must meet criteria that indicate the wetland provides biological, physical, or chemical benefits to the TNW. A significant nexus includes consideration of both hydrologic and ecologic factors. All the streams in the ESC are tributaries to the Tuscarawas River.

### 3.2.2 Stream Assessment

Jurisdictional streams were identified as those waters that possessed a continuously defined bed and bank, OHWM indicators, and lacked a dominance of upland vegetation in the channel. Per USACE guidance, the OHWM is defined as the "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). Channels that parallel a roadway or railroad were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

During the field survey, functional 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* (OEPA, 2006) and in the OEPA's Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (OEPA, 2002). The Qualitative Habitat Evaluation Index (QHEI), is used to characterize larger streams (drainage areas greater than 1 square mile), while the Primary Headwater Habitat Evaluation Index (HHEI) is appropriate for first-order and second-order headwater streams (drainage areas less than 1 square mile).

# **4 Field Survey Results**

Jacobs biologists surveyed the ESC in May through October 2018 by walking the 100-foot wide ESC and evaluating for wetlands and other waters of the U.S. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project ESC (Figures 3-A to 3-AH). The features identified within the Project ESC are displayed and identified on the Wetlands and Waterbodies Delineation Map (Figures 3-A to 3-AH). Detailed information for wetland and waterbody features within the Project ESC is provided in Tables 4-1 (wetlands), 4-2 (streams), and 4-3 (ponds).

## 4.1 Wetlands

Twenty-five wetlands totaling 2.19 acres, ranging in size from 0.01 to 0.53 acres, were delineated within the ESC and are depicted in Figure 3-A to 3-AH. All 25 wetlands were identified as PEM wetlands. No palustrine scrub-shrub (PSS) or palustrine forested (PFO) wetlands were observed within the ESC.

Detailed information for each delineated wetland within the Project ESC is provided in Table 4-1 (follows text) and a summary of the delineated wetlands is provided in Table 4-4. The reported wetland acreage only corresponds to areas delineated within the ESC as some wetlands extended beyond the survey boundary. Completed USACE wetland and upland determination forms are provided in Appendix A. Representative photographs were taken of each wetland during the field survey and are provided in Appendix F.

#### TABLE 4-4: Wetland Summary Table

Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project

Wetland		ORAM Categor	Number of	Acreage	
Туре	Category 1	Category 2	Category 3	Wetlands	within ESC
PEM	18	7	0	25	2.19
Totals	18	7	0	25	2.19

### 4.1.1 Wetland ORAM Results

A total of 18 Category 1 wetlands and seven Category 2 wetlands were identified within the ESC. No Category 3 wetlands were identified within the ESC. Table 4-4 provides additional summary information regarding wetlands identified within the ESC. Completed ORAM forms are included in Appendix B.

The 18 Category 1 wetlands were classified based on the ORAM scores ranging from 20 to 29.5. Generally, these wetlands scored low due to a variety of factors such as small size, intensity of surrounding land use, narrow buffer areas, disturbance to soils and hydrology, the lack of second growth vegetation, and the presence of invasive species.

The seven Category 2 wetlands were classified based on the ORAM scores ranging from 30 to 33.5. Generally, the Category 2 wetlands exhibited medium upland buffers, very low to moderately high intensive surrounding land use (e.g. second growth forest, residential, fenced pasture), sparse to moderate percentage of invasive species, and had habitat and hydrology generally recovered or recovering from previous manipulation due to clearcutting, shrub/sapling removal, and other disturbances, or with no disturbance at all.

No high-quality Category 3 wetlands were identified within the ESC.

### 4.2 Streams

A total of 34 streams, totaling 6,198 linear feet, were identified within the ESC as shown in Figures 3-A to 3-AH. Of these, 17 streams were identified as ephemeral, 13 were intermittent, and four were perennial. Three streams were assessed using the QHEI methodology (drainage area greater than 1 mi<sup>2</sup>) and 31 streams were assessed using the HHEI methodology (drainage area less than 1 mi<sup>2</sup>). Completed QHEI and HHEI forms are provided in Appendix C and D, respectively. Representative photographs were taken of each stream during the field survey and are provided in Appendix F.

### 4.2.1 QHEI Results

Three streams, totaling 706 linear feet, within the ESC were evaluated using the QHEI methodology. All three stream habitats assessed were classified as Fair Warmwater streams. Table 4-5 provides QHEI summary results for streams identified within the ESC, and detailed information can be found in Table 4-2. Completed QHEI forms are included in Appendix C.

#### TABLE 4-5: QHEI Stream Summary Table

Polo Road-Buckeye Power 138 kV Trans	mission Line Rebuild Project
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	QHEI Narrative Category					Number	Length (feet)
Flow Regime	Very Poor Warmwater	Poor Warmwater	Fair Warmwater	Good Warmwater	Excellent Warmwater	of Streams	within ESA
Perennial	0	0	3	0	0	3	706
Total	0	0	3	0	0	3	706

### 4.2.2 HHEI Results

Thirty-one headwater streams totaling 5,492 linear feet within the ESC were evaluated using the HHEI methodology. These streams were classified as ten Ephemeral Aquatic Streams, eight Modified Ephemeral Aquatic Streams, nine Small Drainage Warmwater Streams, and four Modified Small Drainage Warmwater Streams. Table 4-6 provides a summary of the HHEI results for streams identified within the ESC, and detailed information can be found in Table 4-2. Completed HHEI forms are provided in Appendix D. Representative photographs of the streams were taken during the field survey and are provided in Appendix F.

#### TABLE 4-6: HHEI Stream Summary Table

			нн	EI Class			Number	Length
Flow Regime	ime Rheocrene E	Ephemeral Aquatic	Modified Ephemeral Aquatic		Modified Small Drainage Warmwater	Spring Water	of Streams	(feet) within ESA
Ephemeral	0	8	8	0	1	0	17	2,037
Intermittent	0	2	0	8	3	0	13	3,031
Perennial	0	0	0	1	0	0	1	424
Total	0	10	8	9	4	0	31	5,492

## 4.3 Ponds/Open Water

Two ponds totaling 0.07 acres were identified within the ESC and can be found on Figures 3-A to 3-AH. Detailed information for each delineated pond within the ESC is provided in Table 4-3. More detailed information on pond conditions can be found in Appendix E. Representative photographs of ponds can be found in Appendix F.

# **5** Conclusion

Jacobs conducted an environmental survey of the Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project in May through October 2018. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project ESC. The 25 wetlands totaling 2.19 acres within the ESC were all categorized as PEM. Of the 25 wetlands, 18 wetlands were identified as Category 1 wetlands and seven wetlands were identified as Category 2 wetlands. No Category 3 wetlands were identified within the ESC.

Thirty-four streams totaling 6,198 linear feet were identified within the Project ESC, comprising 17 ephemeral streams, 13 intermittent streams, and four perennial streams. Three streams were assessed using the QHEI methodology (drainage area greater than 1 mi<sup>2</sup>) and 31 streams were assessed using the HHEI methodology (drainage area less than 1 mi<sup>2</sup>). Additionally, the two ponds totaled 0.07 acres within the Project ESC.

The jurisdiction of all assessed features will be determined by the USACE based on hydrologic connectivity. Further coordination with the USACE is recommended prior to the submittal of any permit or construction activities.

The results of the environmental resource survey described in this report conducted by Jacobs are limited to the what was identified within the ESC and depicted in Figures 3-A to 3-AH. 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 for construction; therefore, lengths and acreages listed in this report may likely not constitute the actual impacts of the Project at the time of construction. If permits are determined to be necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

The wetland and waterbodies field survey results presented within this report apply to the site conditions at the time of our assessment. Changes within the environmental survey area that may occur with time due to natural processes or human impacts at the project site or on adjacent properties, could invalidate the findings of this report, especially if Jacobs is unaware and has not had the opportunity to revisit the Project survey area. Additionally, changes in applicable standards and regulations may also occur due to legislation or the expansion of knowledge over time. Therefore, the findings of this wetland and waterbodies delineation report may be invalidated, wholly or in part, by changes that are beyond the control of Jacobs.

# 6 References

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## Tables

#### TABLE 3-1: Mapped Soil Units

AbC2	Aaron silty clay loam, 6 to 15 percent slopes, eroded	Not Hydric
BkE	Berks channery silt loam, 25 to 35 percent slopes	Not Hydric
CnD	Coshocton silt loam, 15 to 25 percent slopes	Not Hydric
CpD	Coshocton silt loam, 15 to 25 percent slopes	Not Hydric
CuB	Culleoka silt loam, 3 to 8 percent slopes	Not Hydric
DkC	Dekalb channery loam, 6 to 15 percent slopes	Not Hydric
FcA	Fitchville silt loam, 0 to 3 percent slopes	Predominately Non-Hydric
GbC	Germano fine sandy loam, 6 to 15 percent slopes	Not Hydric
GeC	Germano fine sandy loam, 6 to 15 percent slopes	Not Hydric
GnC	Gilpin silt loam, 8 to 15 percent slopes	Not Hydric
GnD	Gilpin silt loam, 15 to 25 percent slopes	Not Hydric
GsB	Glenford silt loam, 3 to 8 percent slopes	Predominately Non-Hydric
GuD2	Guernsey silty clay loam, 15 to 25 percent slopes, eroded	Not Hydric
HeF	Hazleton channery sandy loam, 40 to 70 percent slopes	Not Hydric
LnC	Lowell silt loam, 8 to 15 percent slopes	Not Hydric
Me	Melvin silt loam, frequently ponded, 0 to 3 percent slopes	Predominately Hydric
Or	Orrville silt loam, 0 to 3 percent slopes, occasionally flooded	Predominately Non-Hydric
RcB	Richland silt loam, 2 to 6 percent slopes	Not Hydric
ReE	Rigley loam, 25 to 40 percent slopes	Not Hydric
RgC	Rigley sandy loam, 8 to 15 percent slopes	Not Hydric
RgD	Rigley sandy loam, 15 to 25 percent slopes	Not Hydric
RgE	Rigley loam, 25 to 40 percent slopes	Not Hydric
RgE	Rigley sandy loam, 25 to 40 percent slopes	Not Hydric
Tg	Tioga silt loam, occasionally flooded	Predominately Non-Hydric
WkC	Westmoreland silt loam, 8 to 15 percent slopes	Not Hydric
WmC	Westmoreland-Coshocton silt loams, 8 to 15 percent slopes	Not Hydric
WmD	Westmoreland-Coshocton silt loams, 15 to 25 percent slopes	Not Hydric
WmE	Westmoreland-Coshocton complex, 25 to 40 percent slopes	Not Hydric
WnE	Westmoreland-Dekalb complex, 25 to 40 percent slopes	Not Hydric
WnF	Westmoreland-Dekalb complex, 40 to 70 percent slopes	Not Hydric

Table 4-1: Detailed Delineated Wetland TablePolo Road - Buckeye Power 138 kV Transmission Line Rebuild Project

Wetland ID	Lo	cation	Wetland Type <sup>1</sup>	Area (ac) <sup>2</sup>	ORAM Score, Category	
wettand ID	Latitude	Longitude	wettand Type-	Area (ac)-	UNAIN SCOLE, Category	
Wetland PB-01	40.45142	-81.04964	PEM	0.06	26, Category 1	
Wetland PB-02	40.44844	-81.04957	PEM	0.08	26.5, Category 1	
Wetland PB-03	40.44677	-81.04984	PEM	0.30	29.5, Category 1	
Wetland PB-04	40.44606	-81.04970	PEM	0.01	26.5, Category 1	
Wetland PB-05	40.44302	-81.04987	PEM	0.05	29, Category 1	
Wetland PB-06	40.44231	-81.05001	PEM	0.02	22, Category 1	
Wetland PB-07	40.42643	-81.05011	PEM	0.18	33.5, Category 2	
Wetland PB-08	40.42551	-81.05023	PEM	0.09	25.5, Category 1	
Wetland PB-09	40.40846	-81.05182	PEM	0.05	33.5, Category 2	
Wetland PB-10	40.40766	-81.05158	PEM	0.02	24, Category 1	
Wetland PB-11	40.39968	-81.05181	PEM	0.04	21, Category 1	
Wetland PB-12	40.39833	-81.05184	PEM	0.03	20, Category 1	
Wetland PB-13	40.39806	-81.05197	PEM	0.03	20, Category 1	
Wetland PB-14	40.38383	-81.05280	PEM	0.07	27, Category 1	
Wetland PB-15	40.37894	-81.05311	PEM	0.06	27, Category 1	
Wetland PB-16	40.37725	-81.05301	PEM	0.53	31, Category 2	
Wetland PB-17	40.37537	-81.05297	PEM	0.03	23, Category 1	
Wetland PB-18	40.37463	-81.05307	PEM	0.09	23, Category 1	
Wetland PB-19	40.36396	-81.05263	PEM	0.04	24.5, Category 1	
Wetland PB-20	40.35758	-81.05203	PEM	0.05	29, Category 1	
Wetland PB-21	40.35625	-81.05230	PEM	0.02	27, Category 1	
Wetland PB-22	40.34425	-81.05474	PEM	0.04	30, Category 2	
Wetland PB-23	40.34249	-81.05545	PEM	0.03	30.5, Category 2	
Wetland PB-24	40.32996	-81.06108	PEM	0.03	30, Category 2	
Wetland PB-25	40.32846	-81.06166	PEM	0.24	31, Category 2	
TOTAL: 25		2.19				

<sup>1</sup>Cowardin et al. 1979.

<sup>2</sup>This acreage only corresponds to the area delineated within the environmental survey corridor.

#### TABLE 4-2: Detailed Delineated Stream Table

#### Polo Road - Buckeye Power 138 kV Transmission Line Rebuild Project

Stream ID	Location		Flow Regime <sup>1</sup>	Linear	Average OHWM	Average TOB	HHEI/QHEI	Class/Designation
	Latitude	Longitude	-	Feet <sup>2</sup>	Width (Feet)	Width (Feet)	Score	
Stream PB-01	40.45073	-81.04962	Ephemeral	62	0.5	2	19	Modified Ephemeral
Stream PB-02	40.44742	-81.04974	Perennial	424	4	7	58	Small Drainage Warmwater
Stream PB-03	40.44736	-81.04960	Perennial	278	12	15	45	Fair Warmwater
Stream PB-04	40.44341	-81.04988	Ephemeral	120	1	2	23	Ephemeral
Stream PB-05	40.44312	-81.05000	Ephemeral	48	1.5	2	28	Ephemeral
Stream PB-06	40.42673	-81.05012	Ephemeral	218	1	1.5	23	Ephemeral
Stream PB-07	40.42625	-81.05006	Intermittent	190	2	3	35	Small Drainage Warmwater
Stream PB-08	40.42551	-81.05022	Ephemeral	116	1	1.5	25	Modified Ephemeral
Stream PB-09	40.42072	-81.05074	Intermittent	166	2	3	45	Small Drainage Warmwater
Stream PB-10	40.41043	-81.05195	Ephemeral	92	1	2	26	Modified Ephemeral
Stream PB-11	40.40730	-81.05164	Intermittent	687	3	4	43	Small Drainage Warmwater
Stream PB-12	40.40174	-81.05172	Perennial	328	18	22	48	Fair Warmwater
Stream PB-13	40.39726	-81.05197	Ephemeral	105	1.5	2	34	Ephemeral
Stream PB-14	40.39698	-81.05198	Ephemeral	124	1	1.5	34	Ephemeral
Stream PB-15	40.39632	-81.05200	Ephemeral	151	1	1.5	34	Modified Small Drainage Warmwater
Stream PB-16	40.37778	-81.05302	Perennial	100	30	40	44	Fair Warmwater
Stream PB-17	40.37679	-81.05317	Intermittent	188	2	2	36	Modified Small Drainage Warmwater
Stream PB-18	40.37523	-81.05295	Intermittent	11	2	3	36	Modified Small Drainage Warmwater
Stream PB-19	40.37465	-81.05309	Intermittent	89	3	4	36	Modified Small Drainage Warmwater
Stream PB-20	40.36798	-81.05310	Intermittent	111	1.5	3	45	Small Drainage Warmwater
Stream PB-21	40.36397	-81.05269	Intermittent	135	2	4	39	Small Drainage Warmwater
Stream PB-22	40.36090	-81.05223	Ephemeral	32	2	3	17	Modified Ephemeral
Stream PB-23	40.36040	-81.05230	Ephemeral	104	1.5	2	17	Modified Ephemeral
Stream PB-24	40.35998	-81.05213	Ephemeral	98	1	1.5	17	Modified Ephemeral
Stream PB-25	40.35764	-81.05208	Ephemeral	211	1	2	25	Ephemeral
Stream PB-26	40.35629	-81.05225	Ephemeral	111	1	2	26	Ephemeral
Stream PB-27	40.35130	-81.05285	Ephemeral	120	2	5	12	Modified Ephemeral
Stream PB-28	40.34373	-81.05501	Intermittent	338	4	7	61	Small Drainage Warmwater

Stream ID	Lo Latitude	cation Longitude	Flow Regime <sup>1</sup>	Linear Feet <sup>2</sup>	Average OHWM Width (Feet)	Average TOB Width (Feet)	HHEI/QHEI Score	Class/Designation
Stream PB-29	40.34355	-81.05500	Ephemeral	17	0.5	1	25	Modified Ephemeral
Stream PB-30	40.34338	-81.05507	Intermittent	17	3	5	34	Small Drainage Warmwater
Stream PB-31	40.34227	-81.05572	Intermittent	123	2	4	29	Ephemeral
Stream PB-32	40.33673	-81.05806	Intermittent	387	2.5	5	30	Small Drainage Warmwater
Stream PB-33	40.33034	-81.06075	Ephemeral	310	1.5	2.5	25	Ephemeral
Stream PB-34	40.32927	-81.06137	Intermittent	589	3	4	26	Ephemeral
TOTAL: 34		CUMULATIV	E STREAM LENGTH	6,198				

## TABLE 4-2: Detailed Delineated Stream Table Polo Road - Buckeye Power 138 kV Transmission Line Rebuild Project

<sup>1</sup> Flow regime is defined as perennial, intermittent, or ephemeral. This determination was interpreted using field observations and USGS topographic maps as appropriate.

<sup>2</sup>Stream length within the environmental survey area.

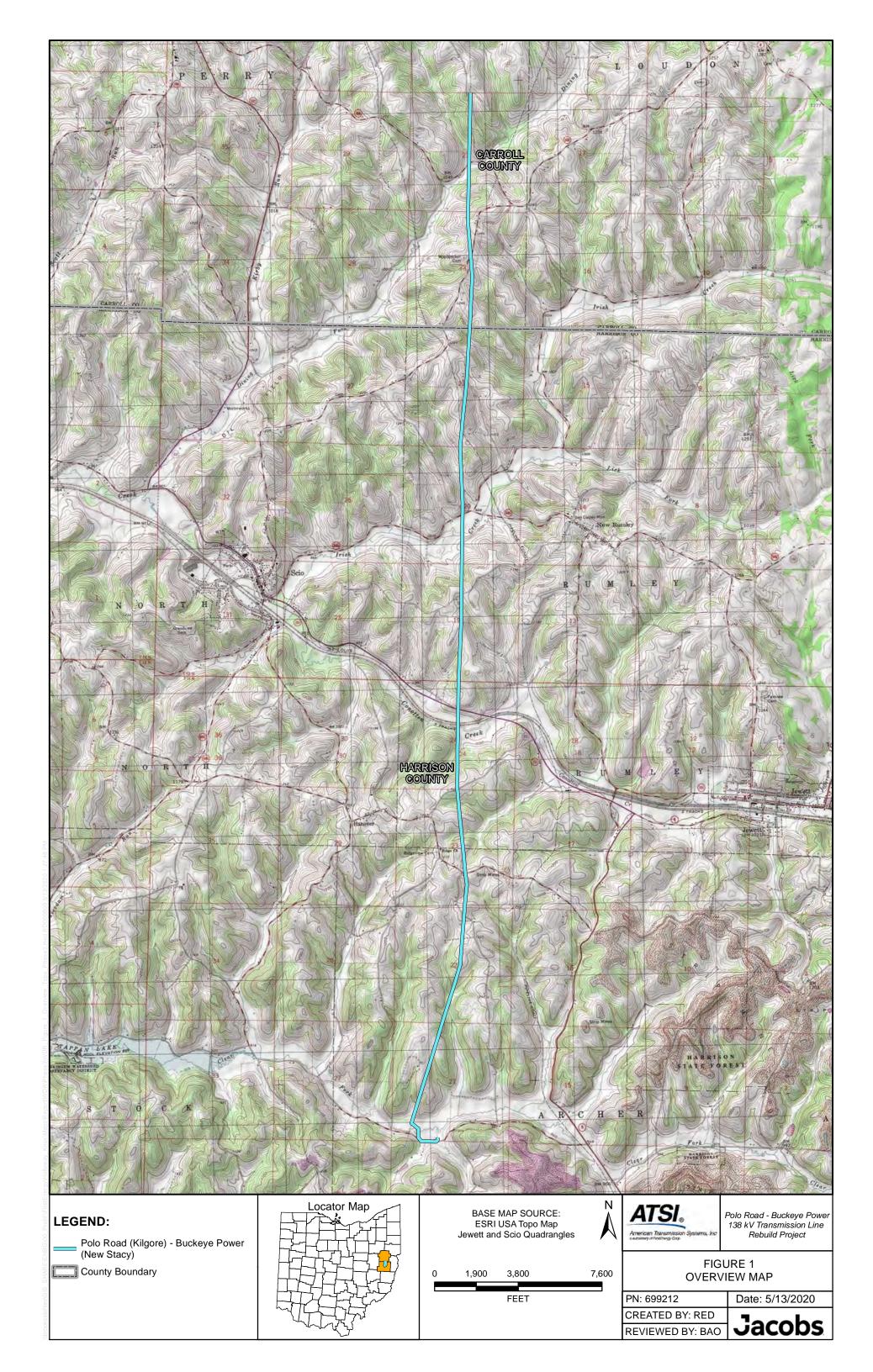
#### TABLE 4-3: Detailed Delineated Pond Table

Pond ID		Area (aa)1		
Pond ID	Latitude	Longitude	Area (ac) <sup>1</sup>	
Pond PB-01	40.40740	-81.05160	0.04	
Pond PB-02	40.37410	-81.05330	0.03	
TOTAL: 2		CUMULATIVE POND AREA	0.07	

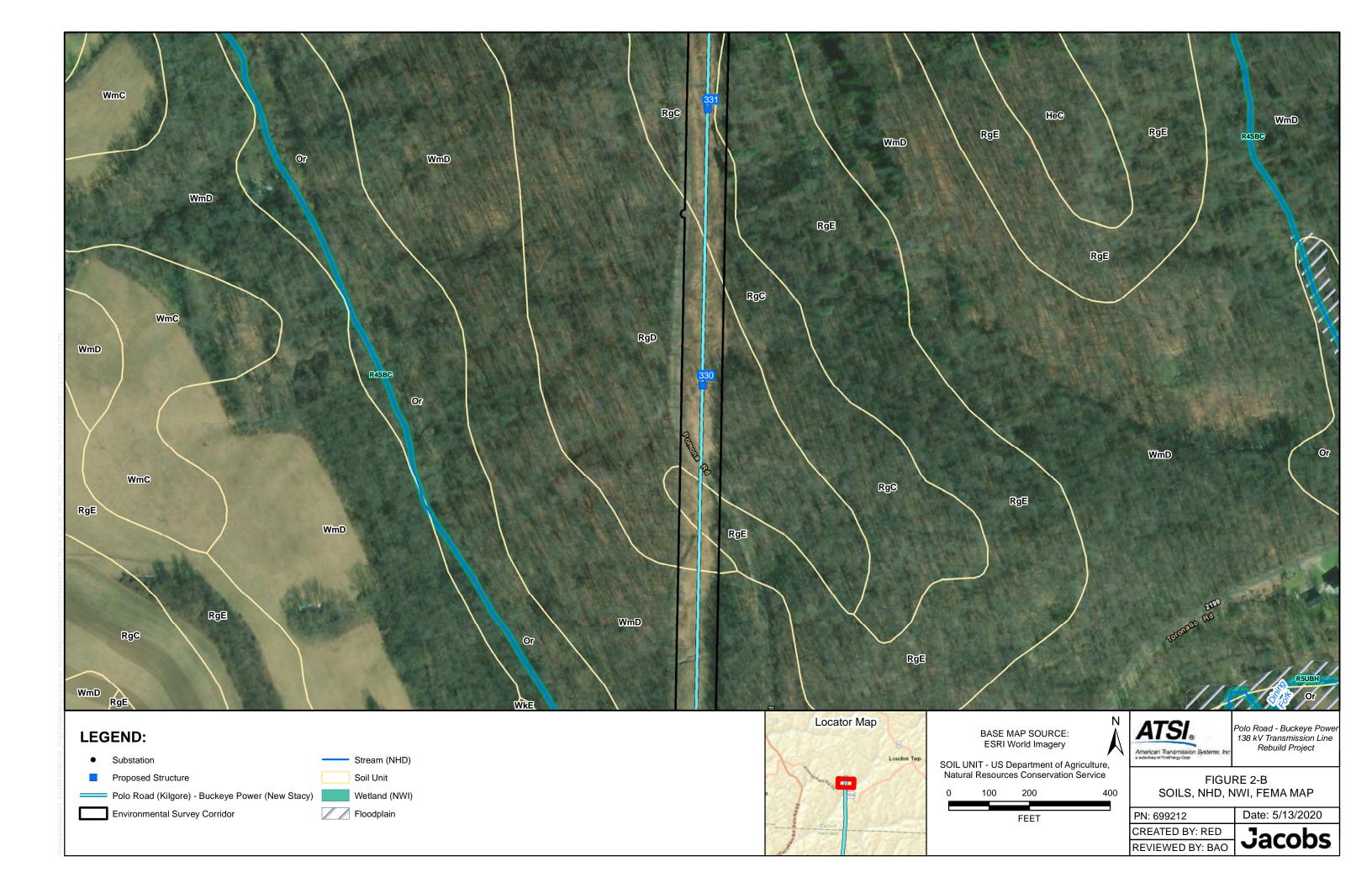
Polo Road - Buckeye Power 138 kV Transmission Line Rebuild Project

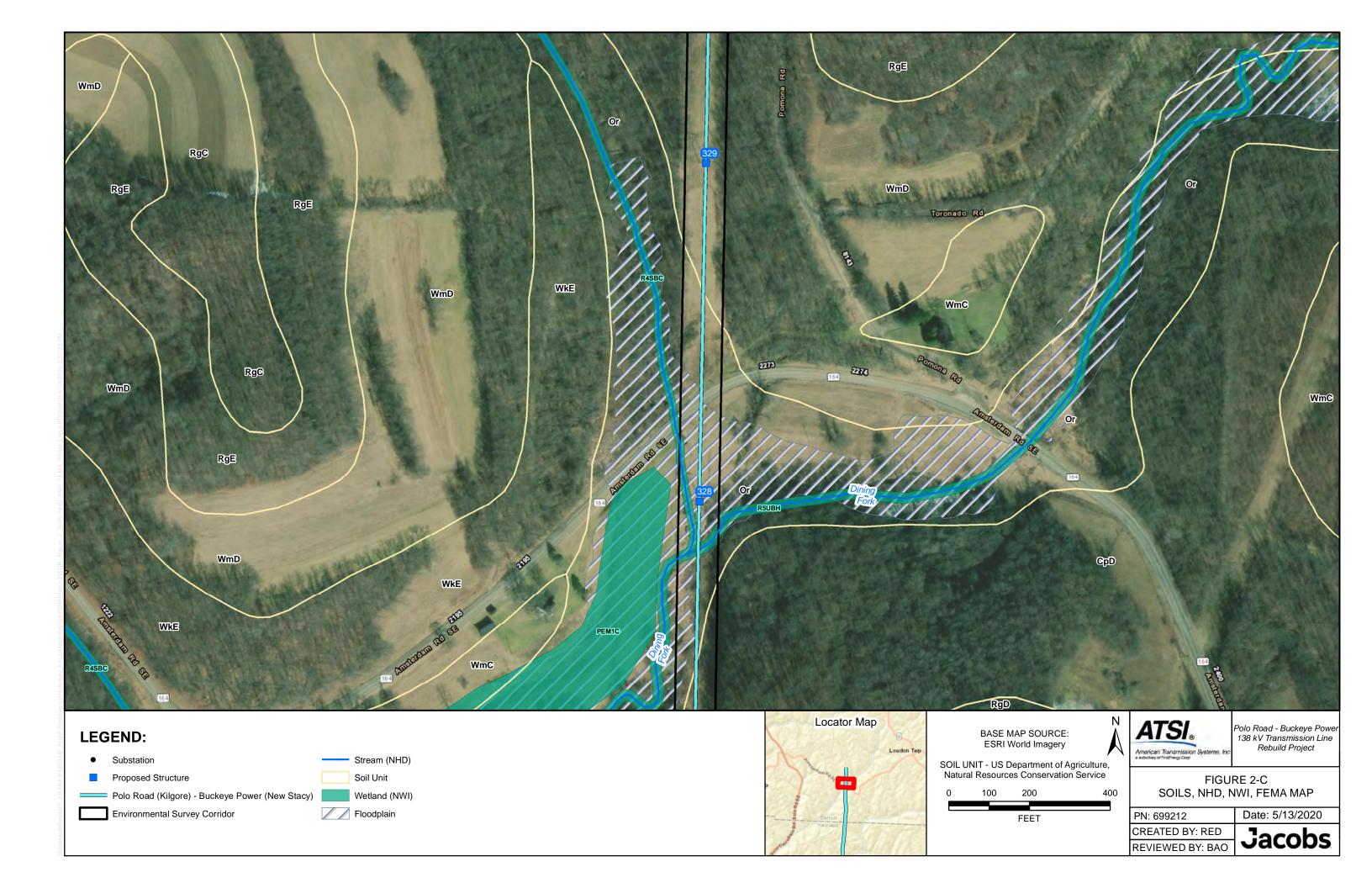
<sup>1</sup>This acreage only corresponds to the area delineated within the environmental survey corridor.

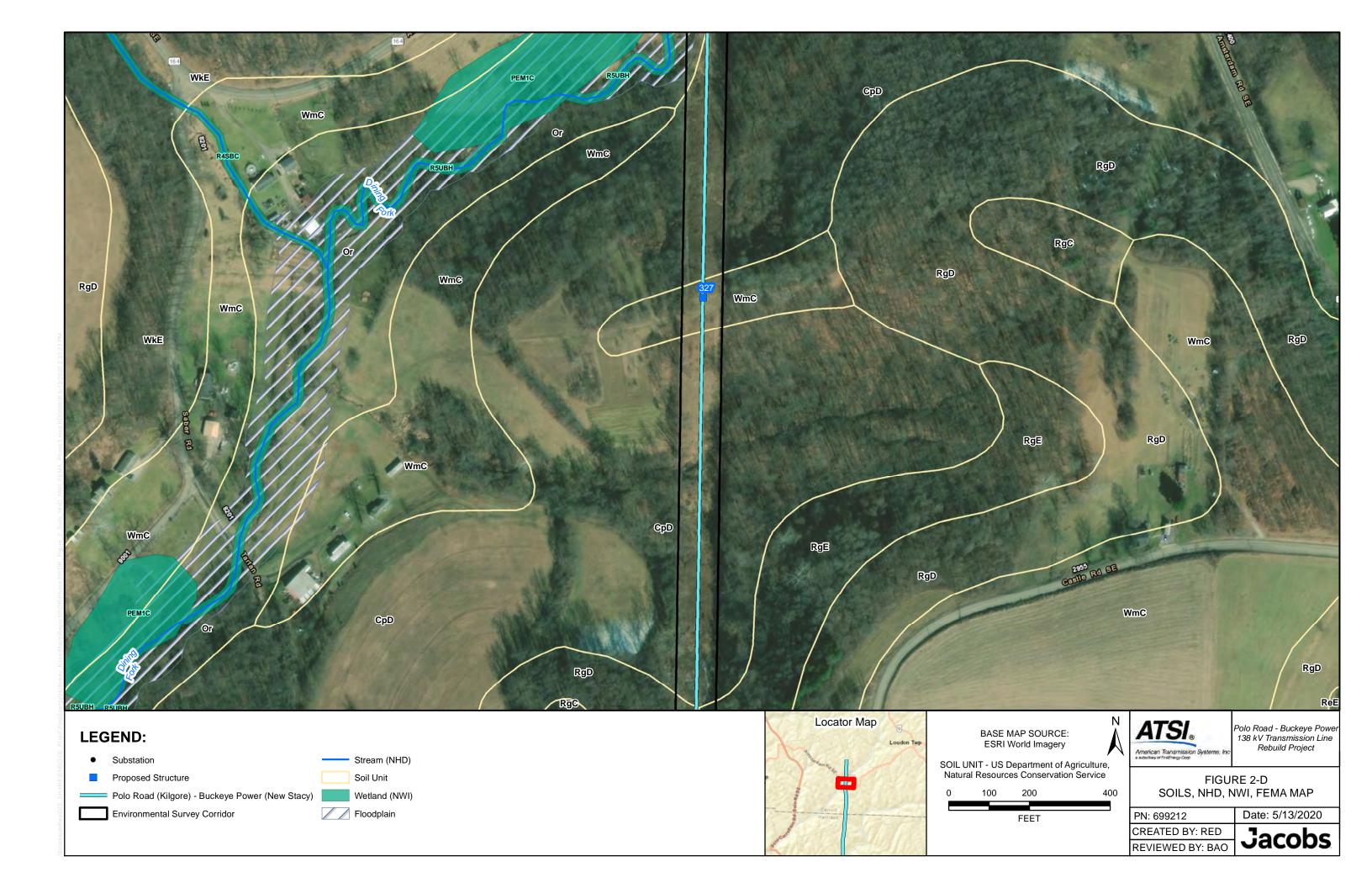
# Figures

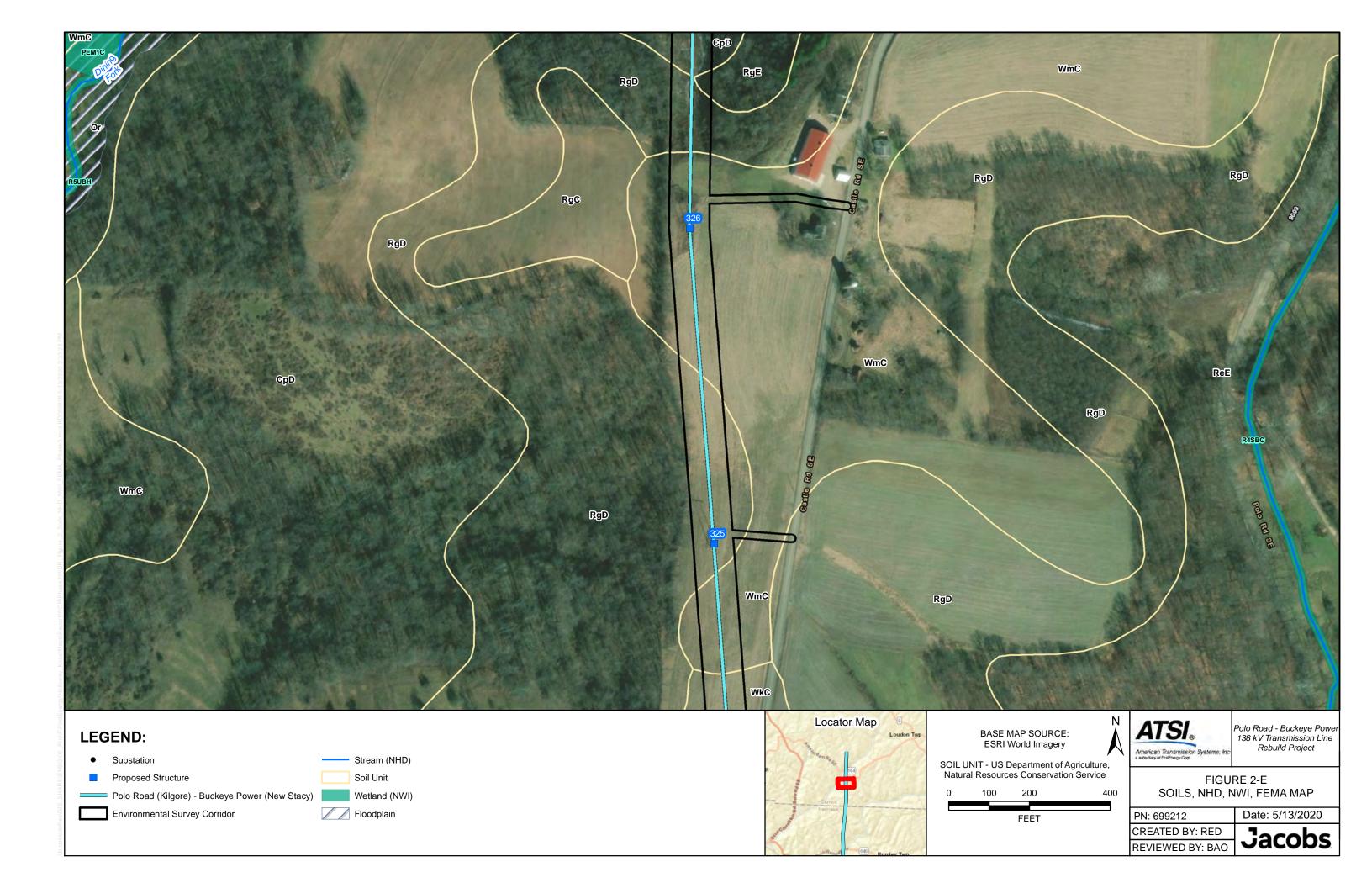


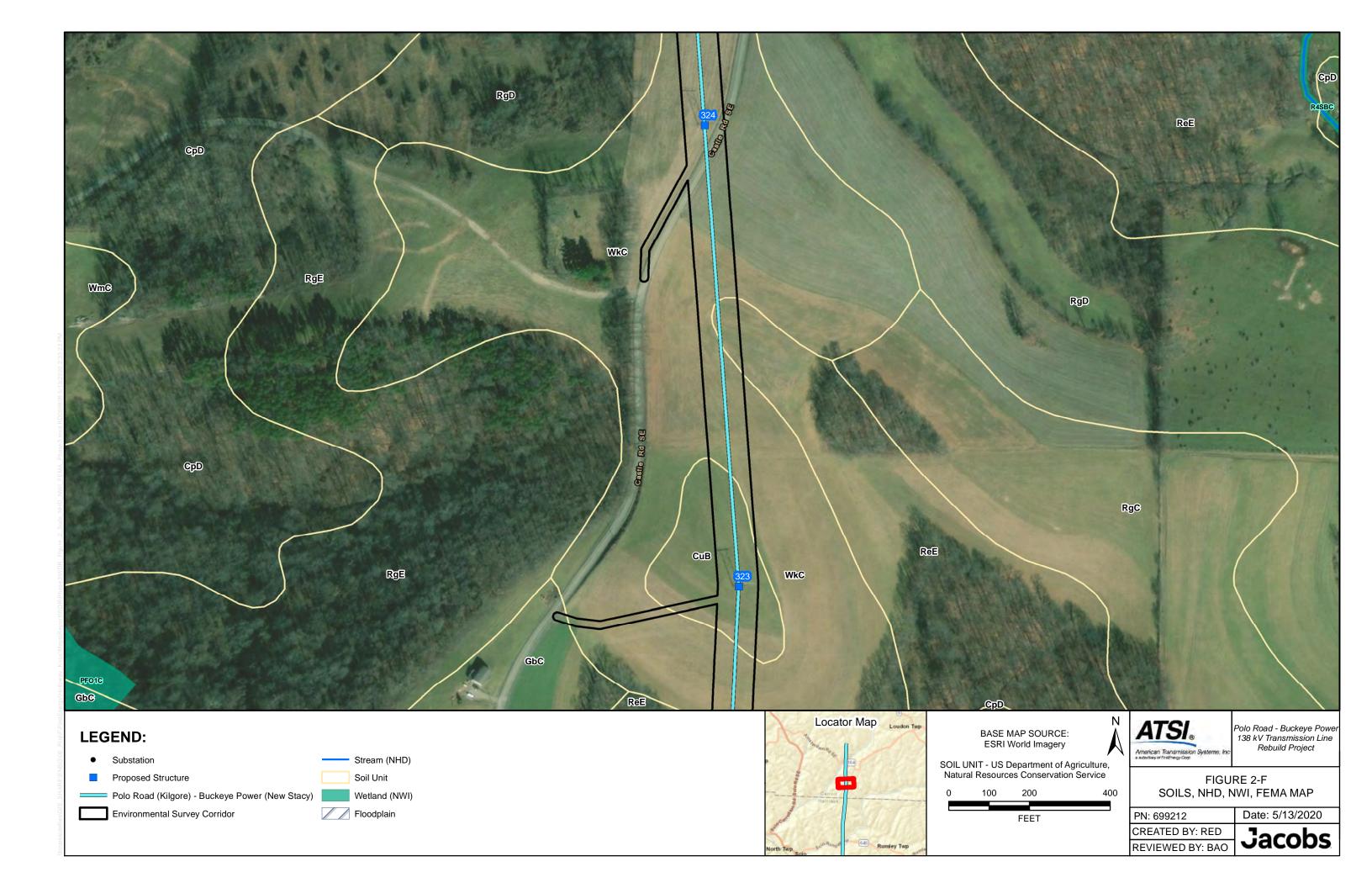


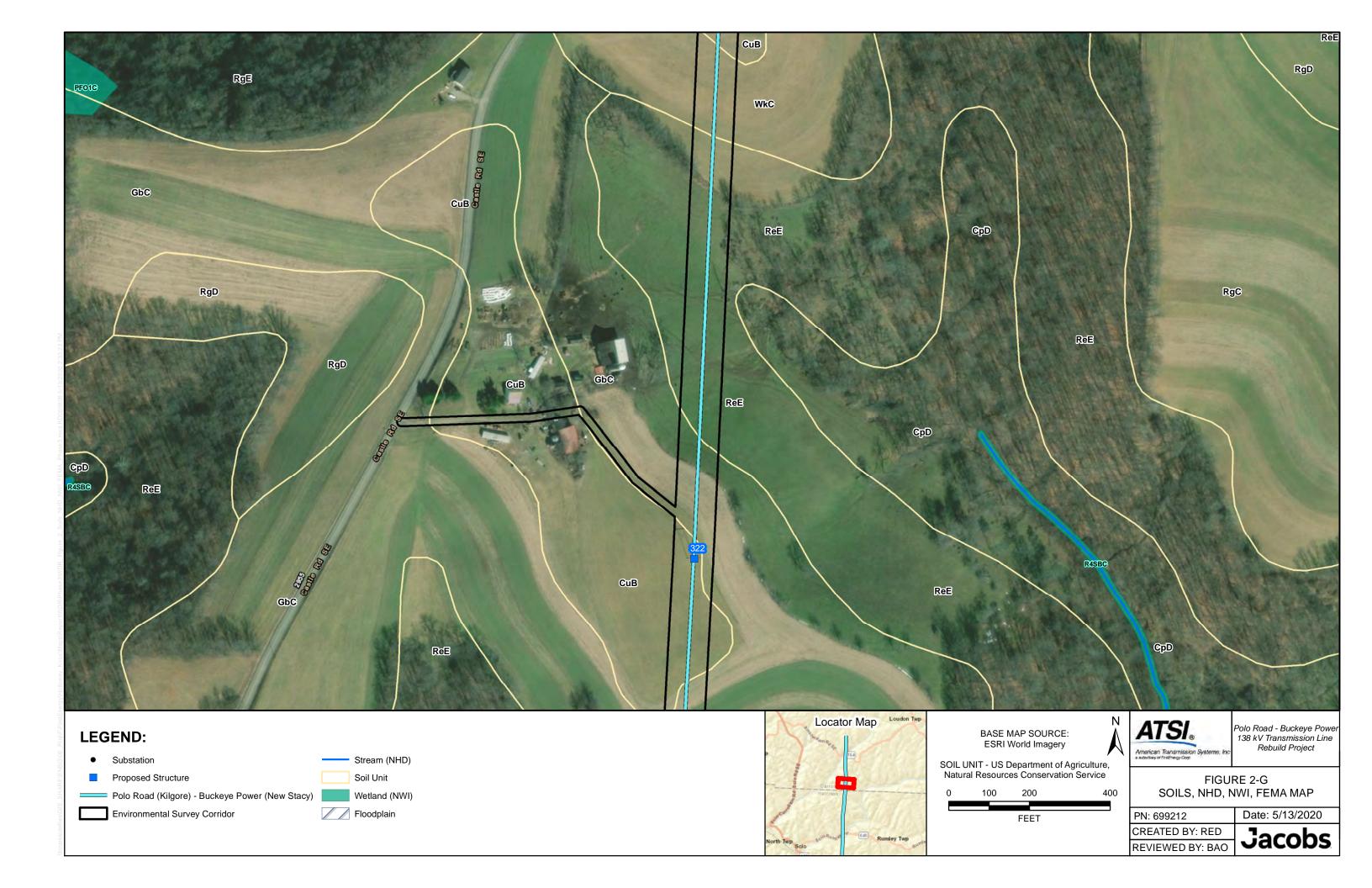


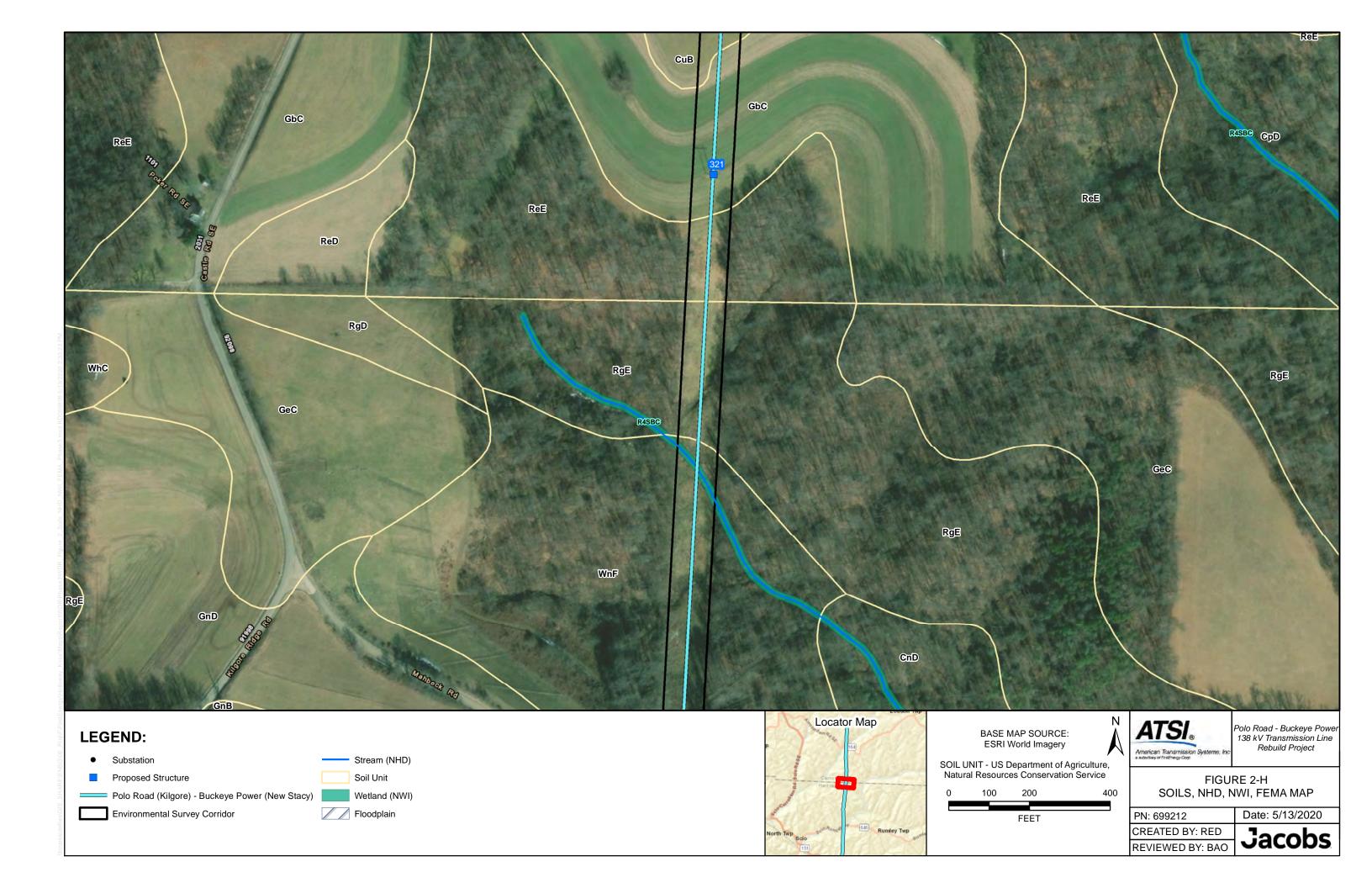


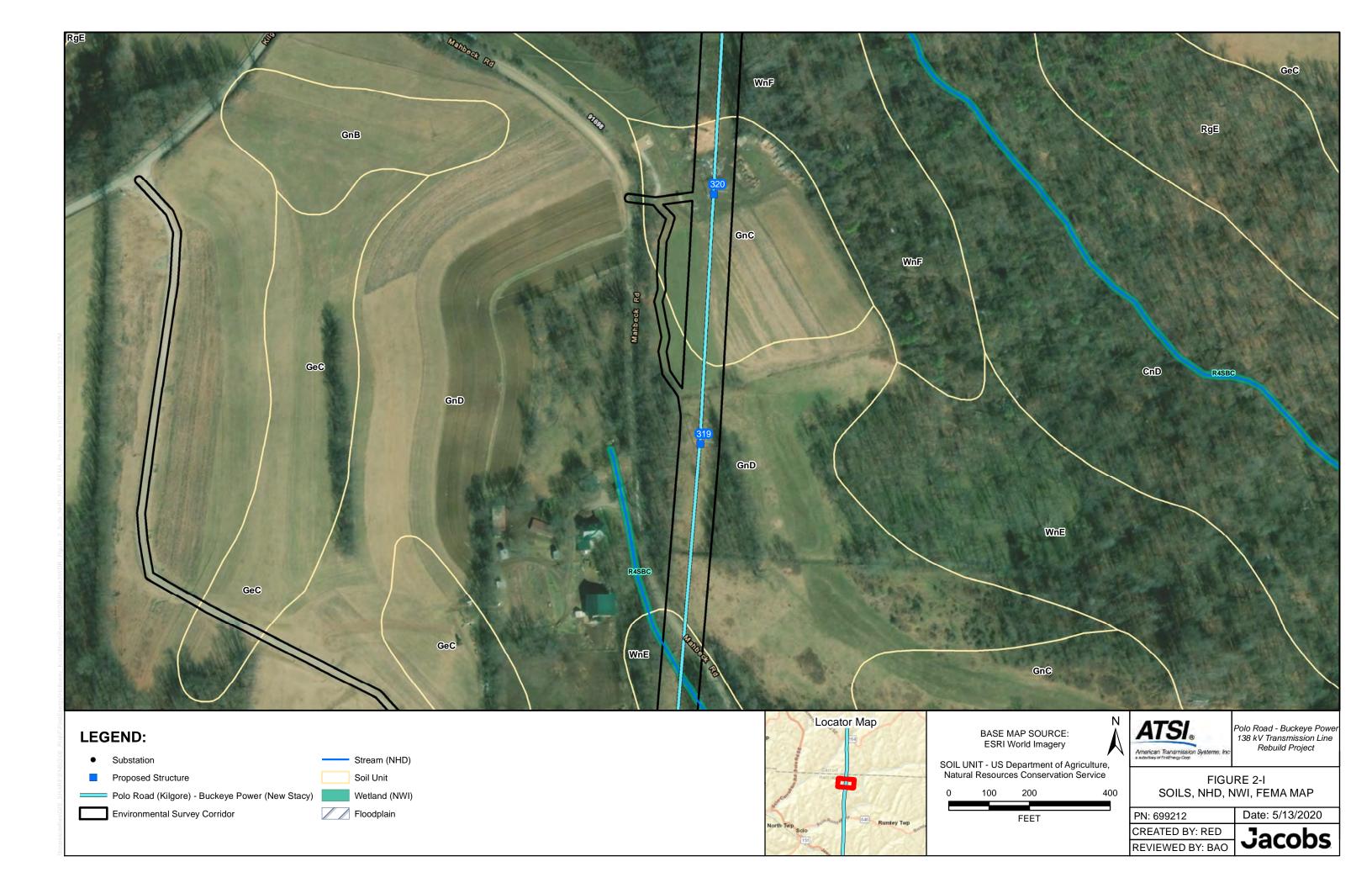


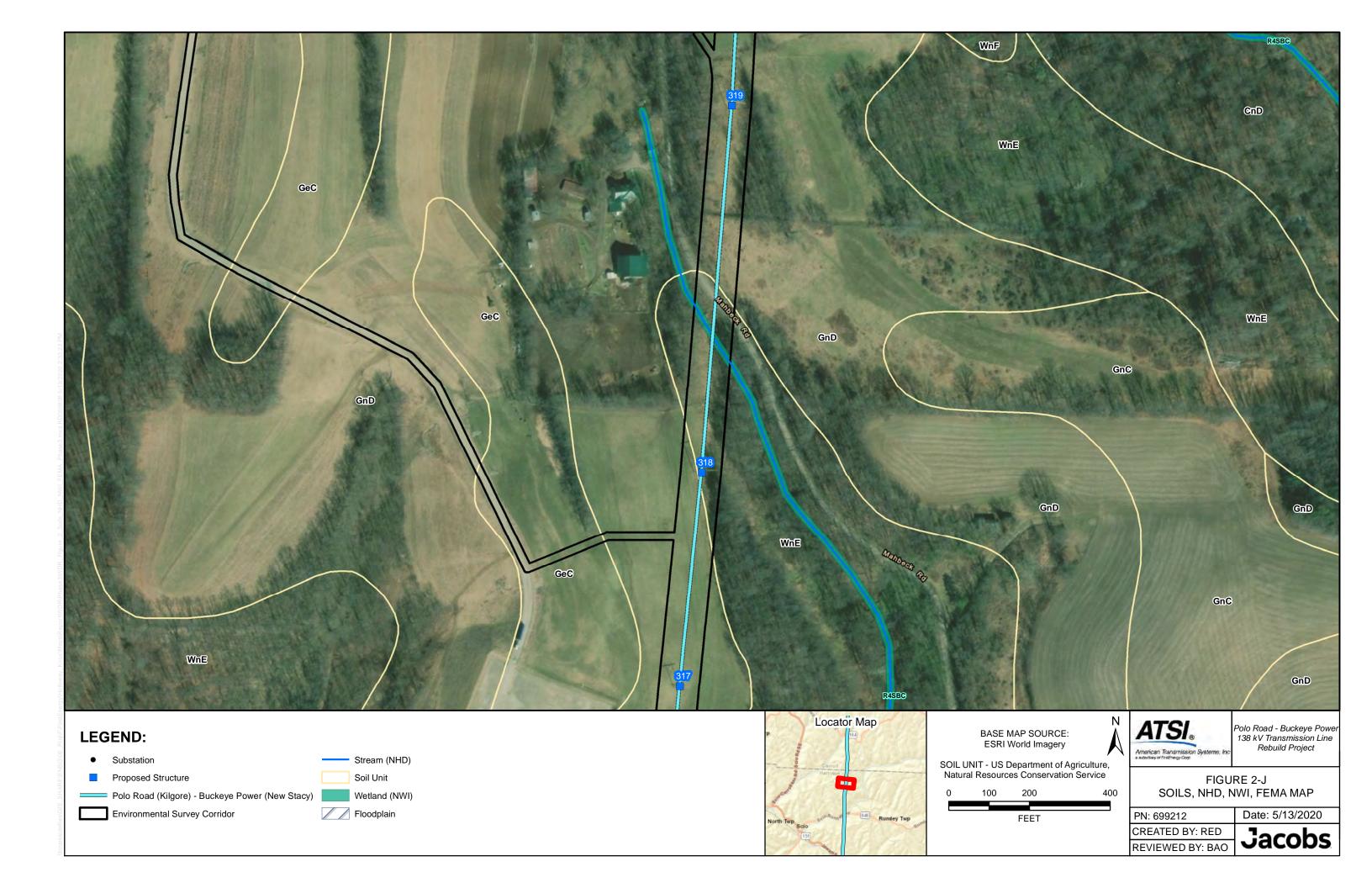


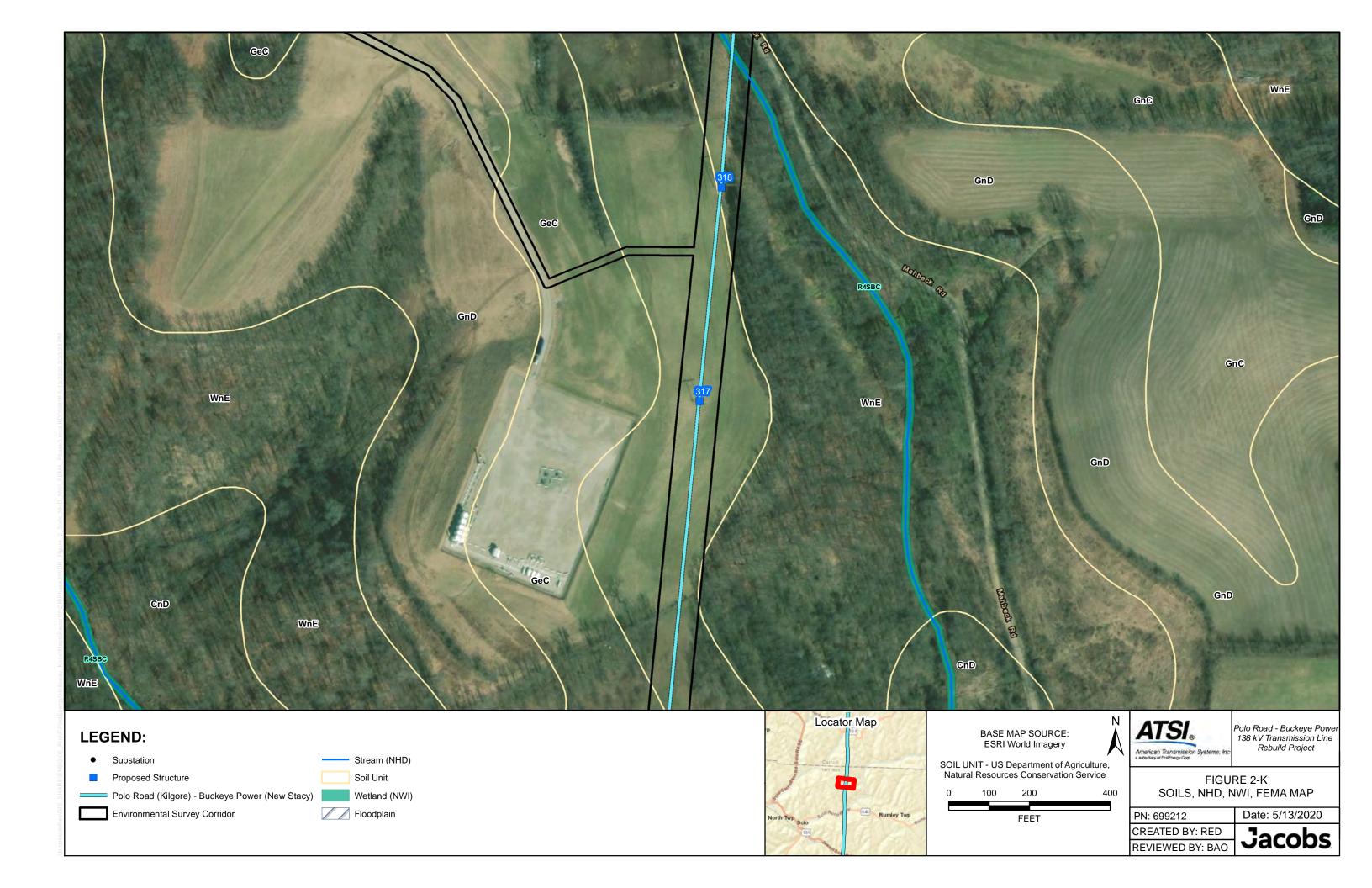


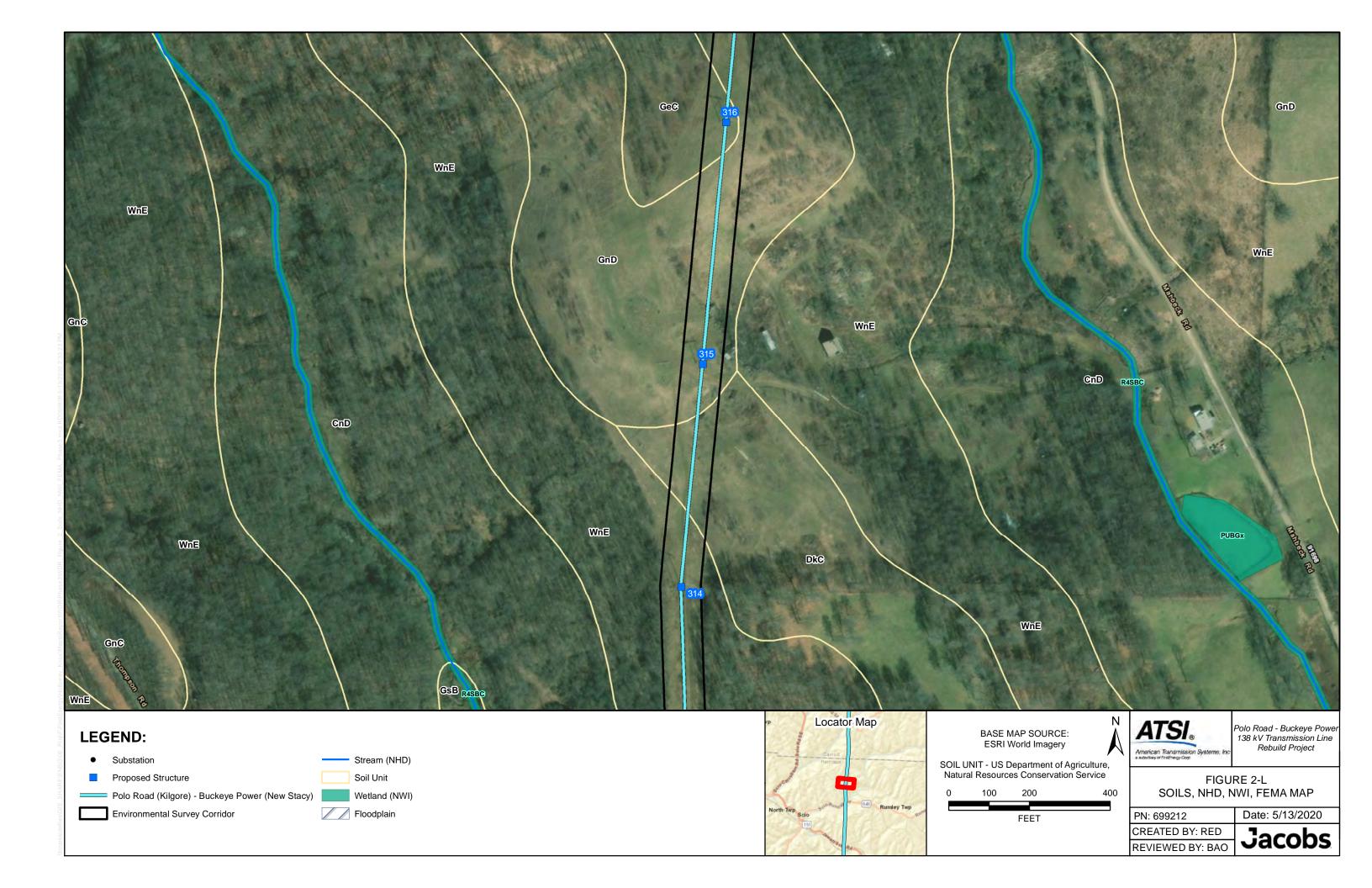


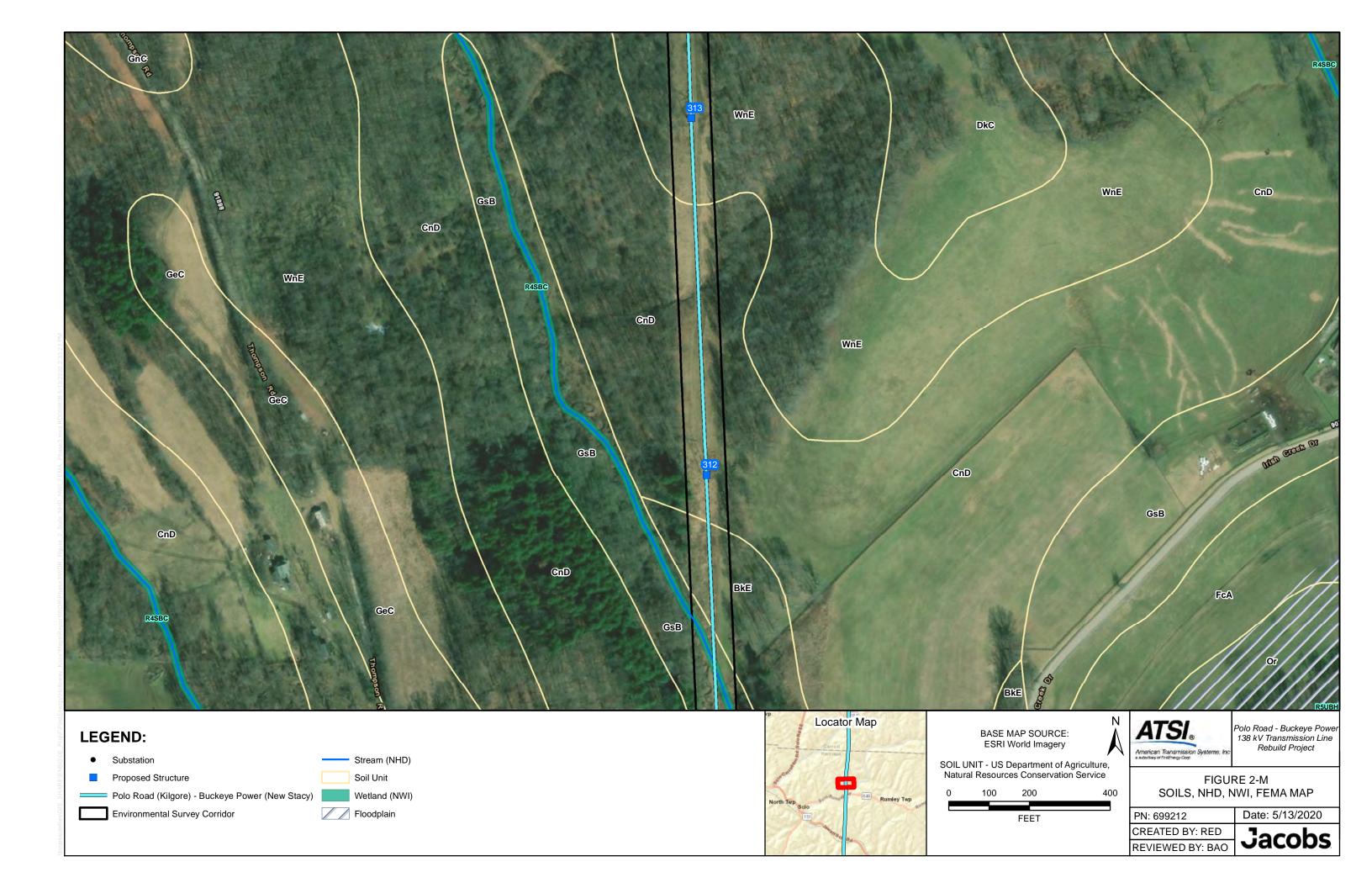


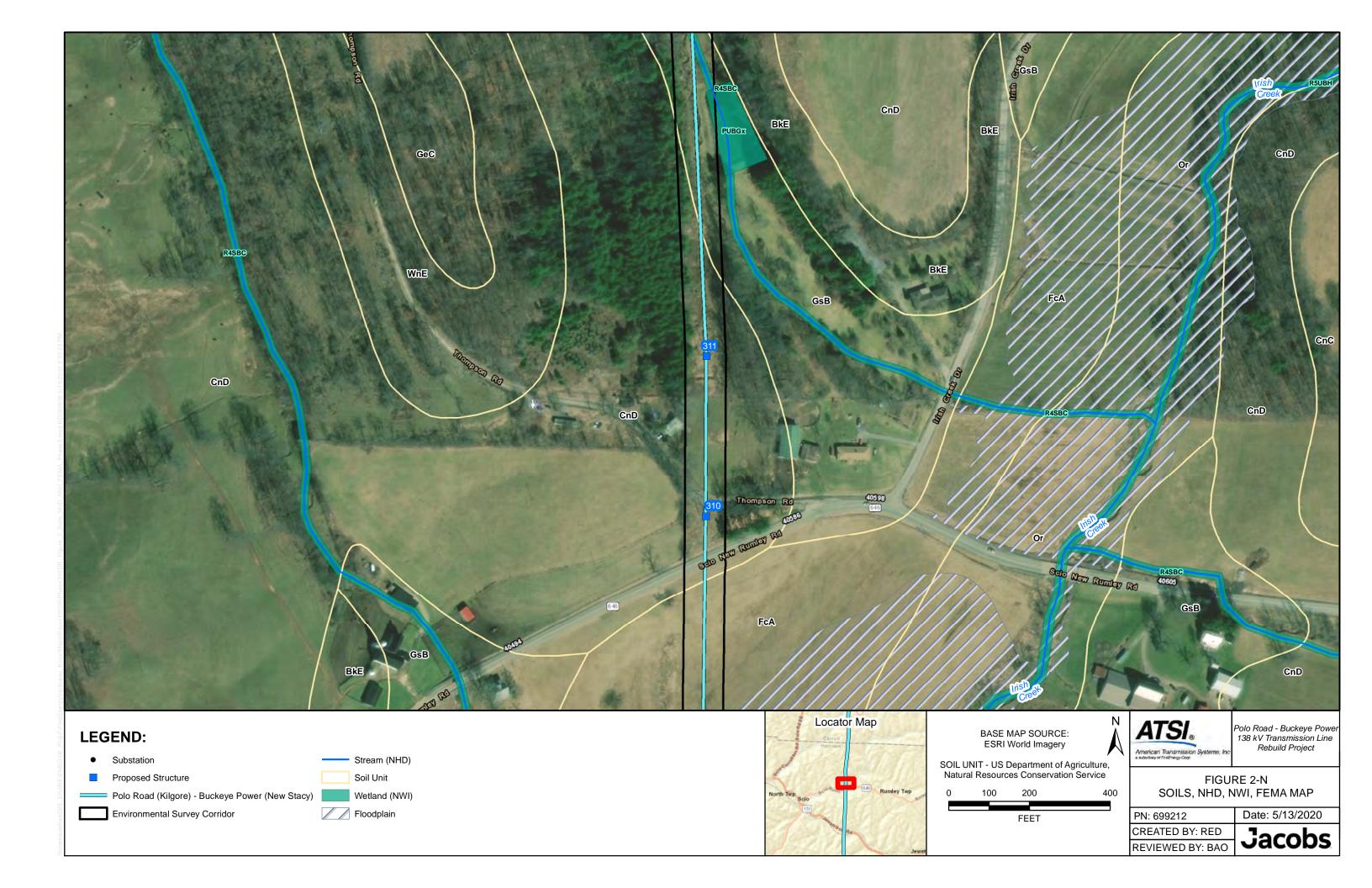


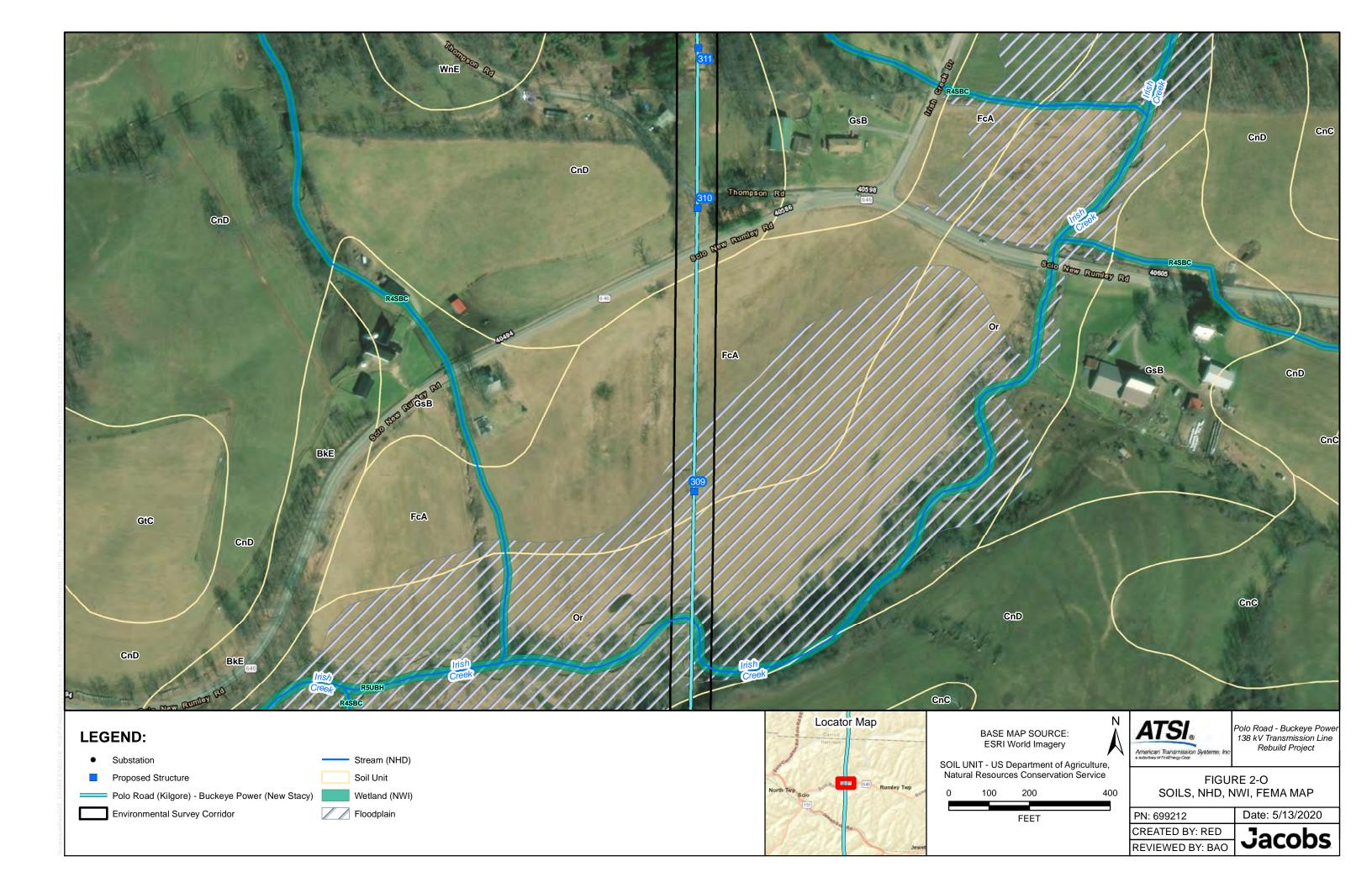


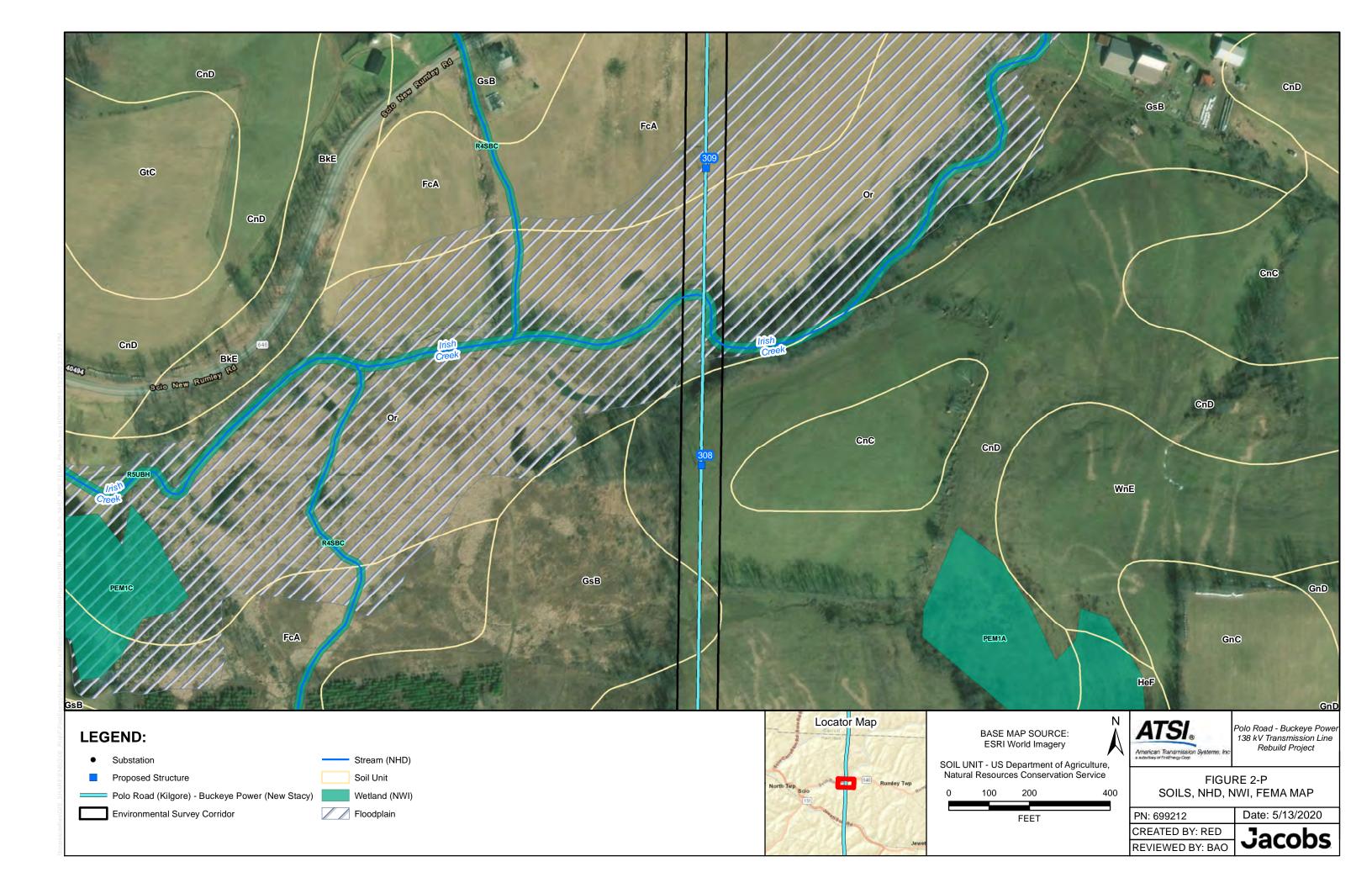


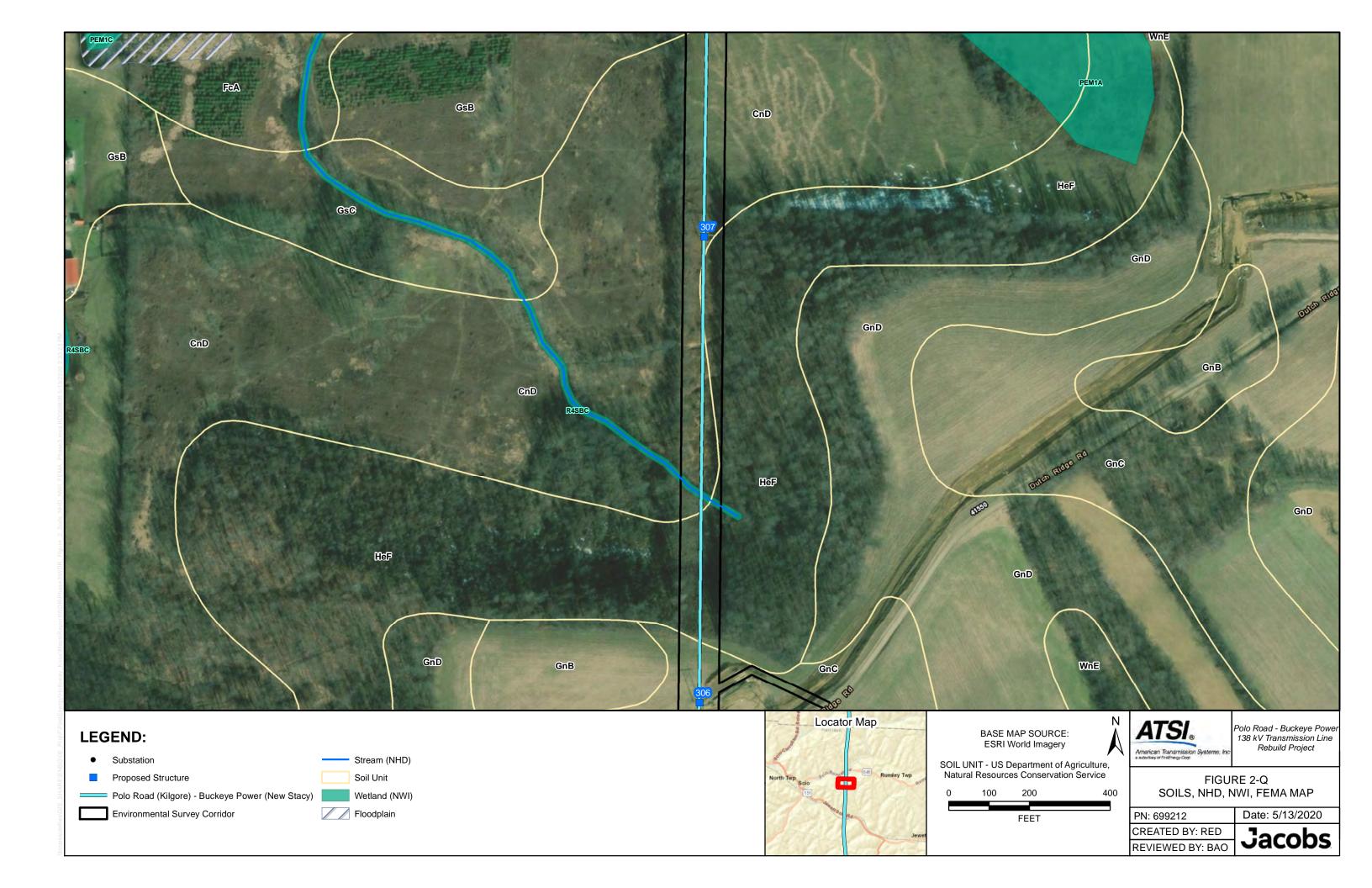


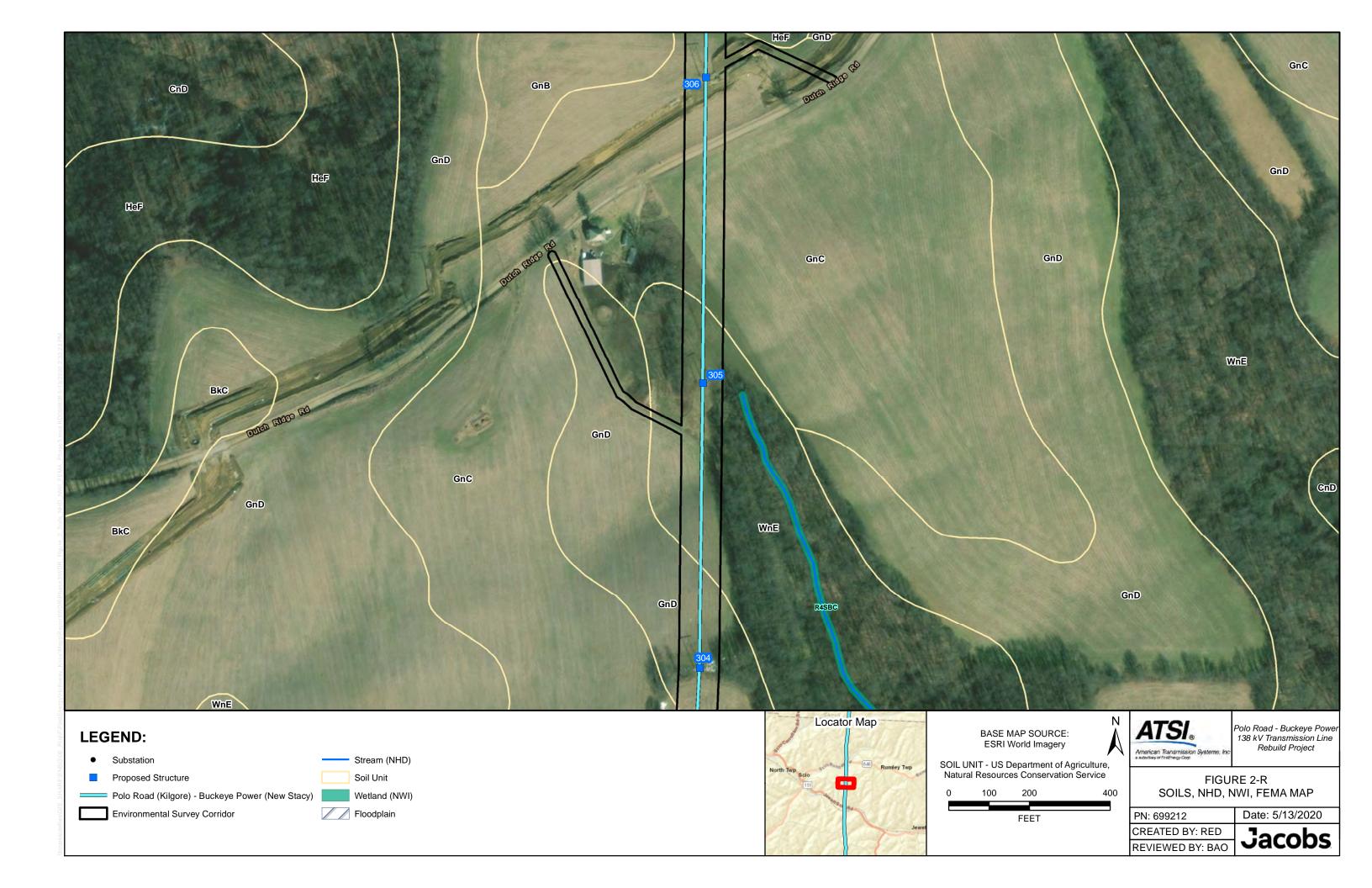


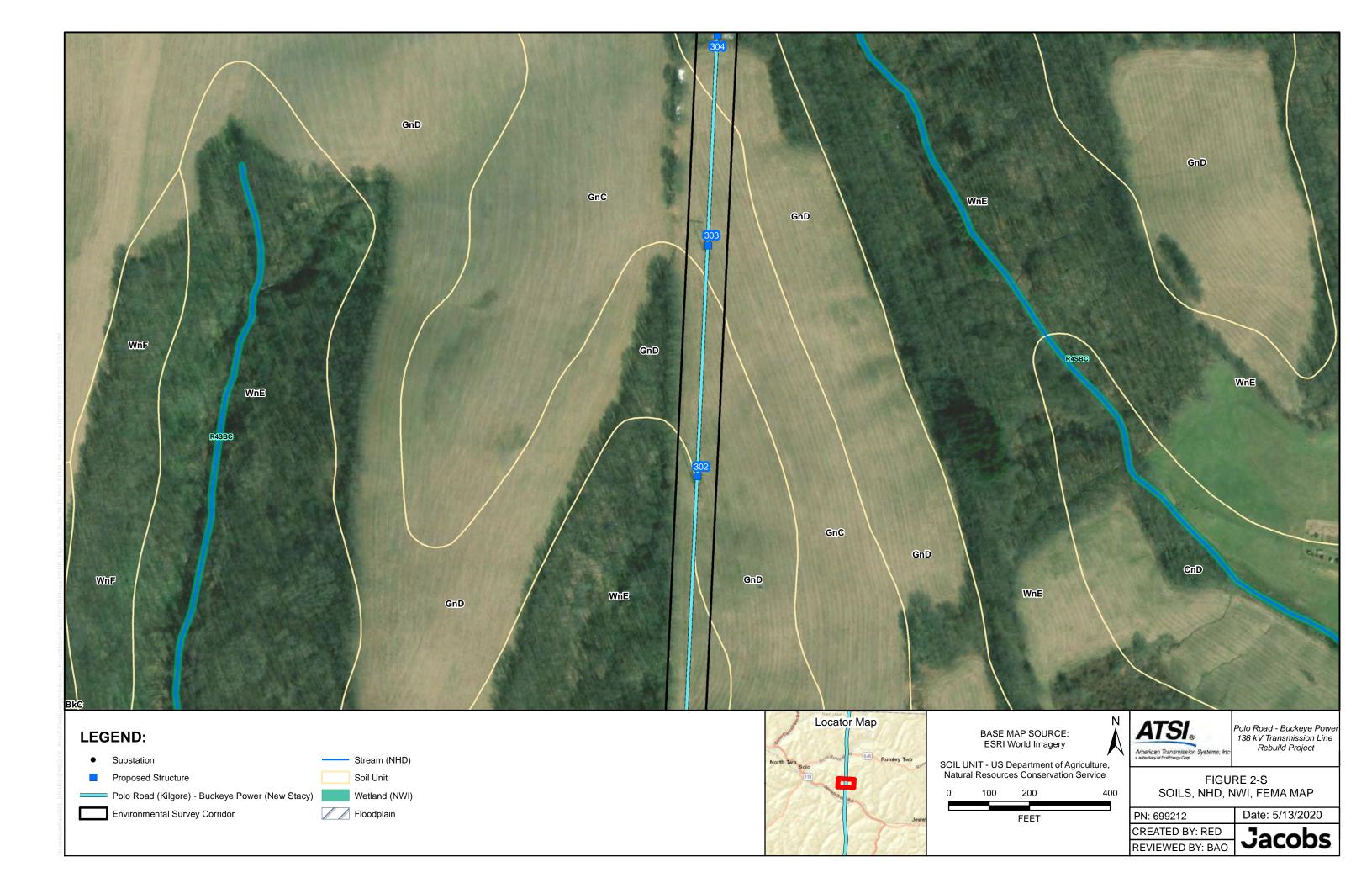


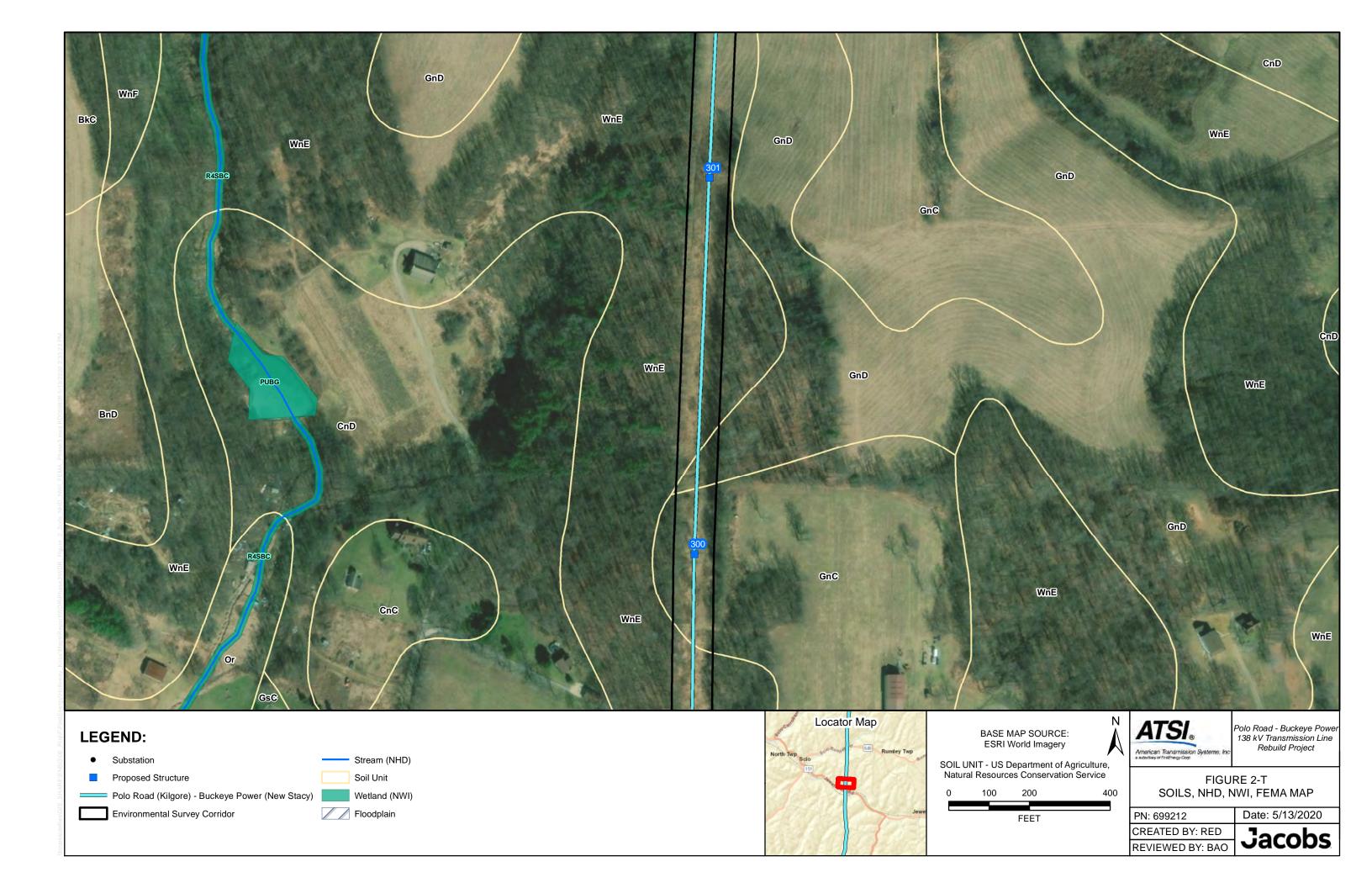


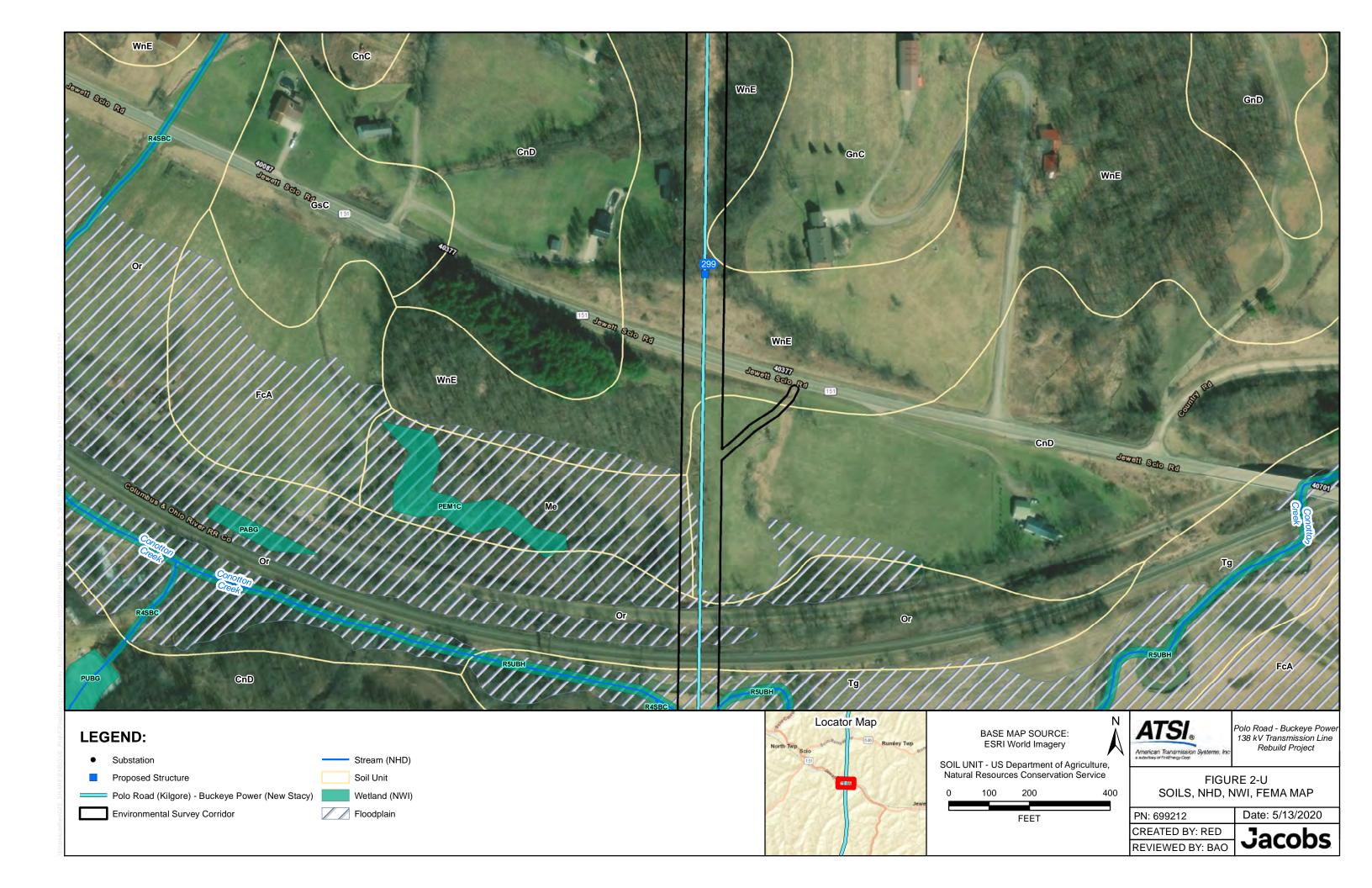


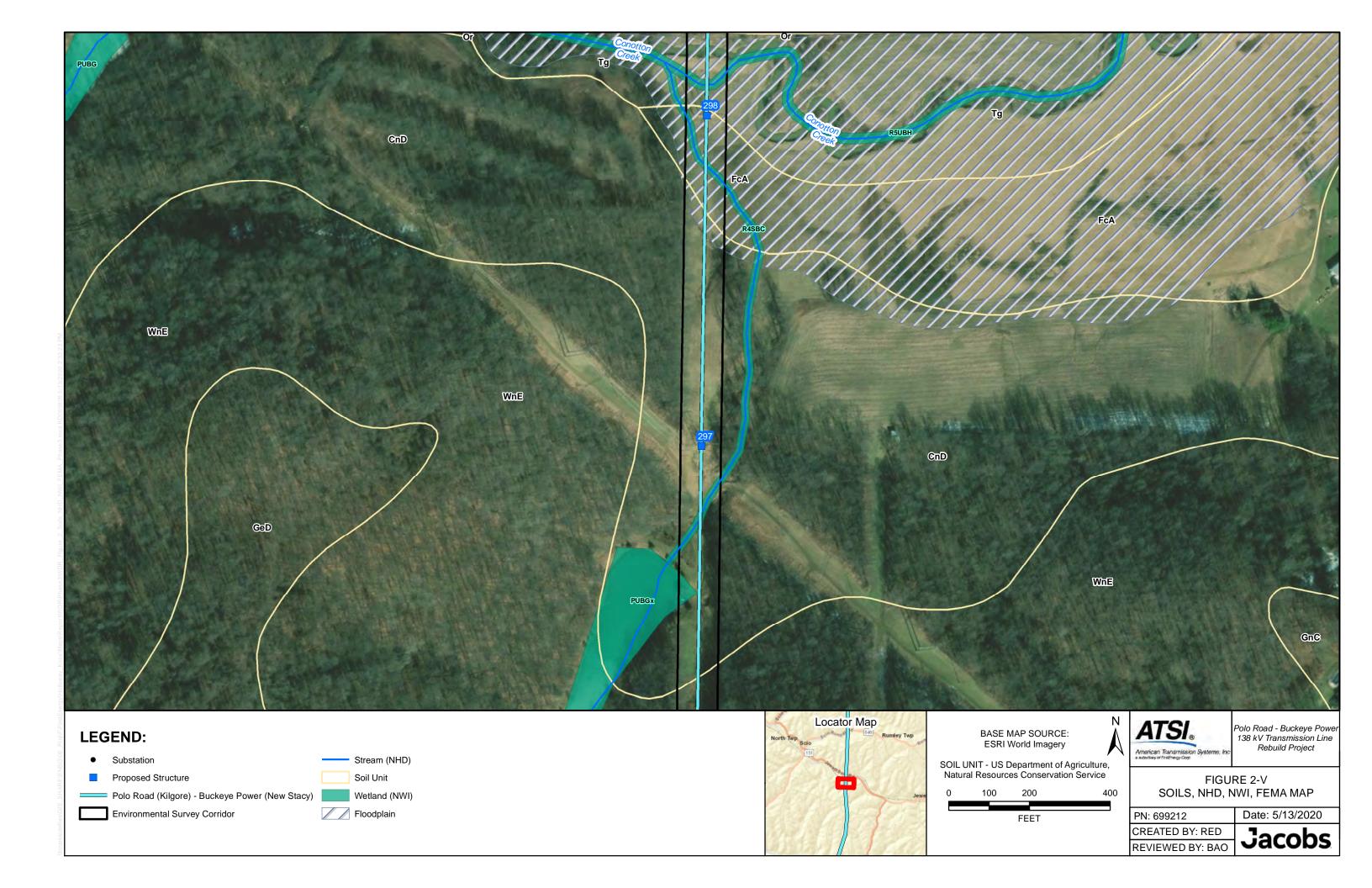


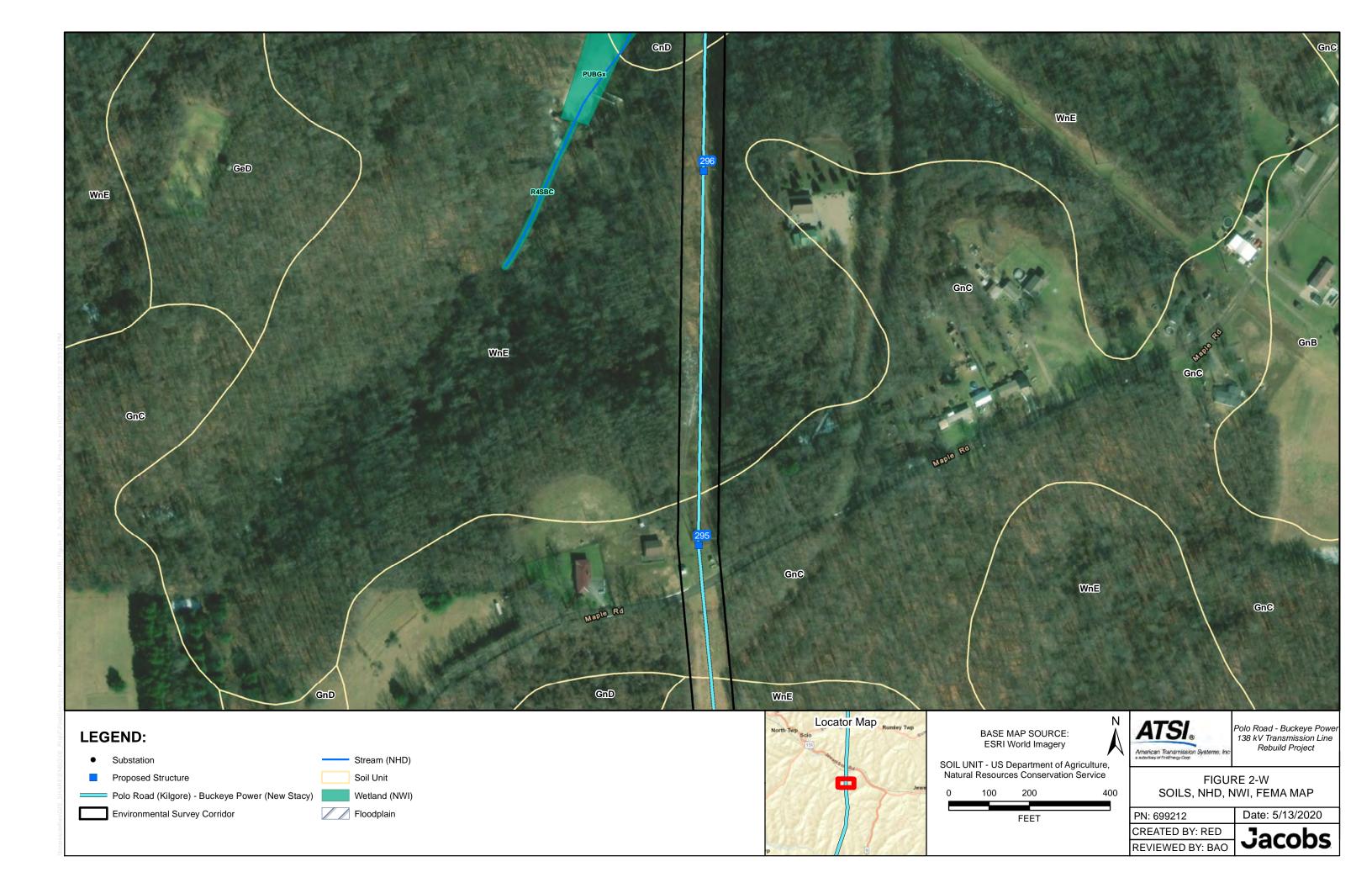


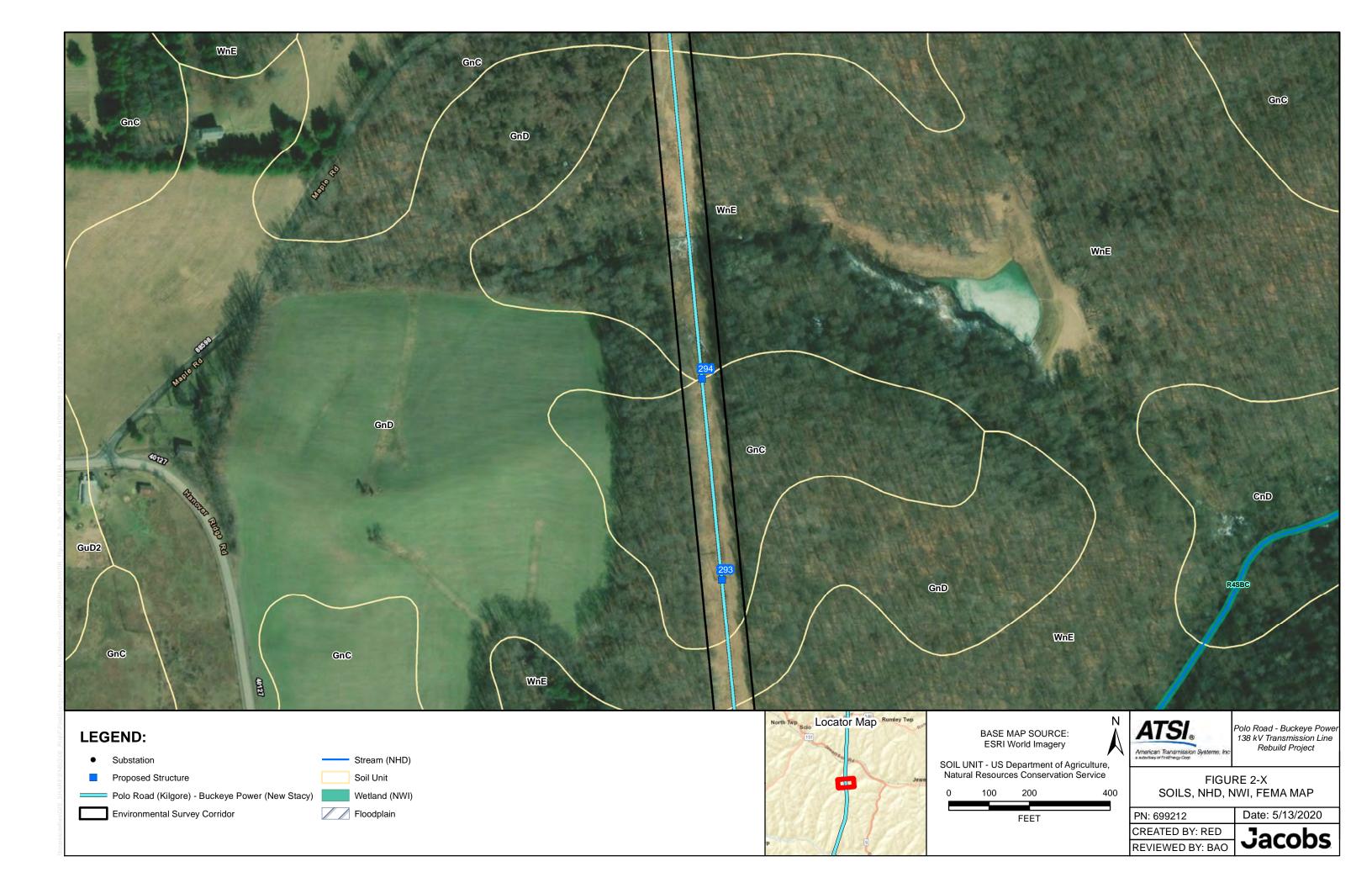


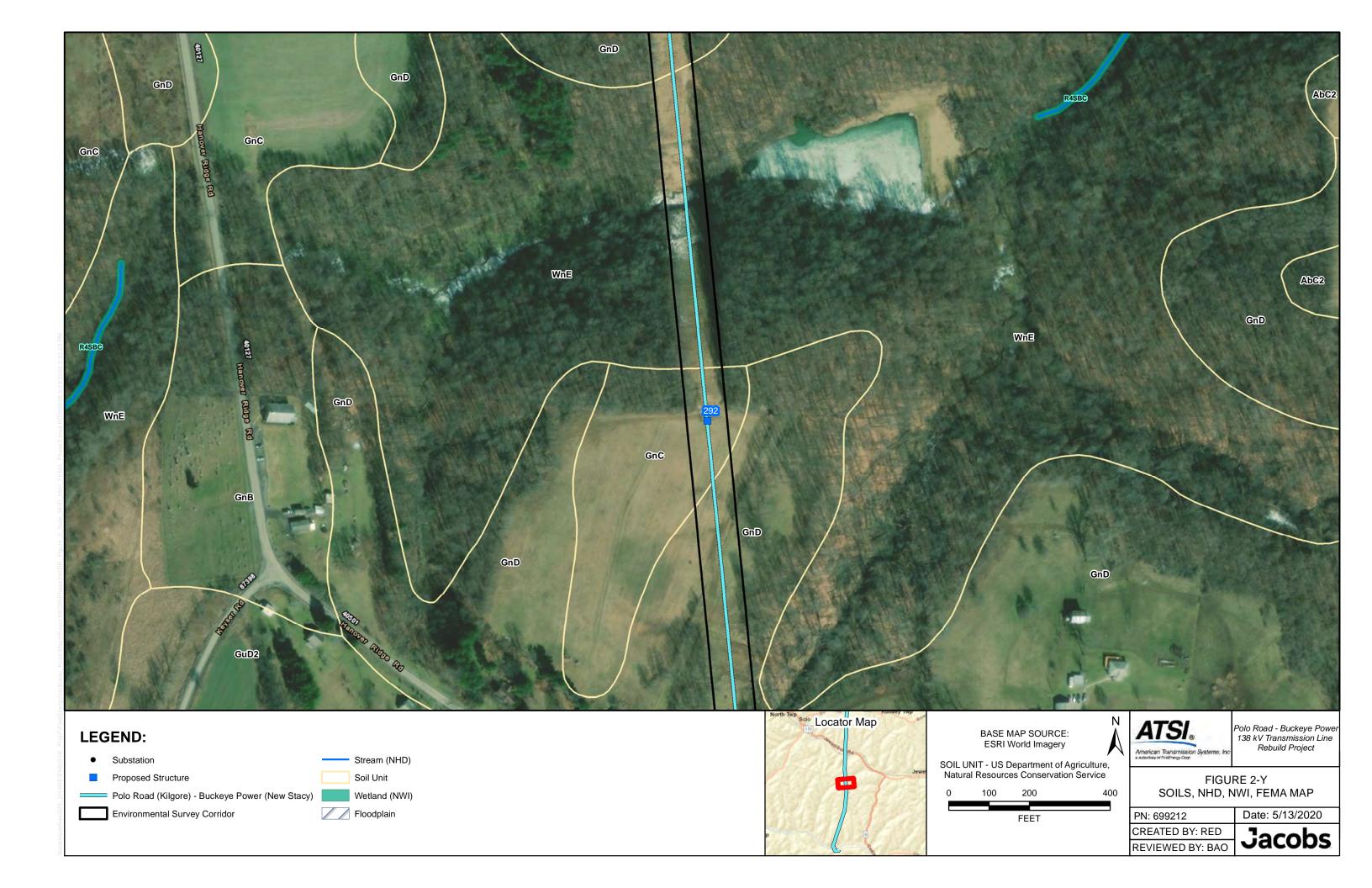


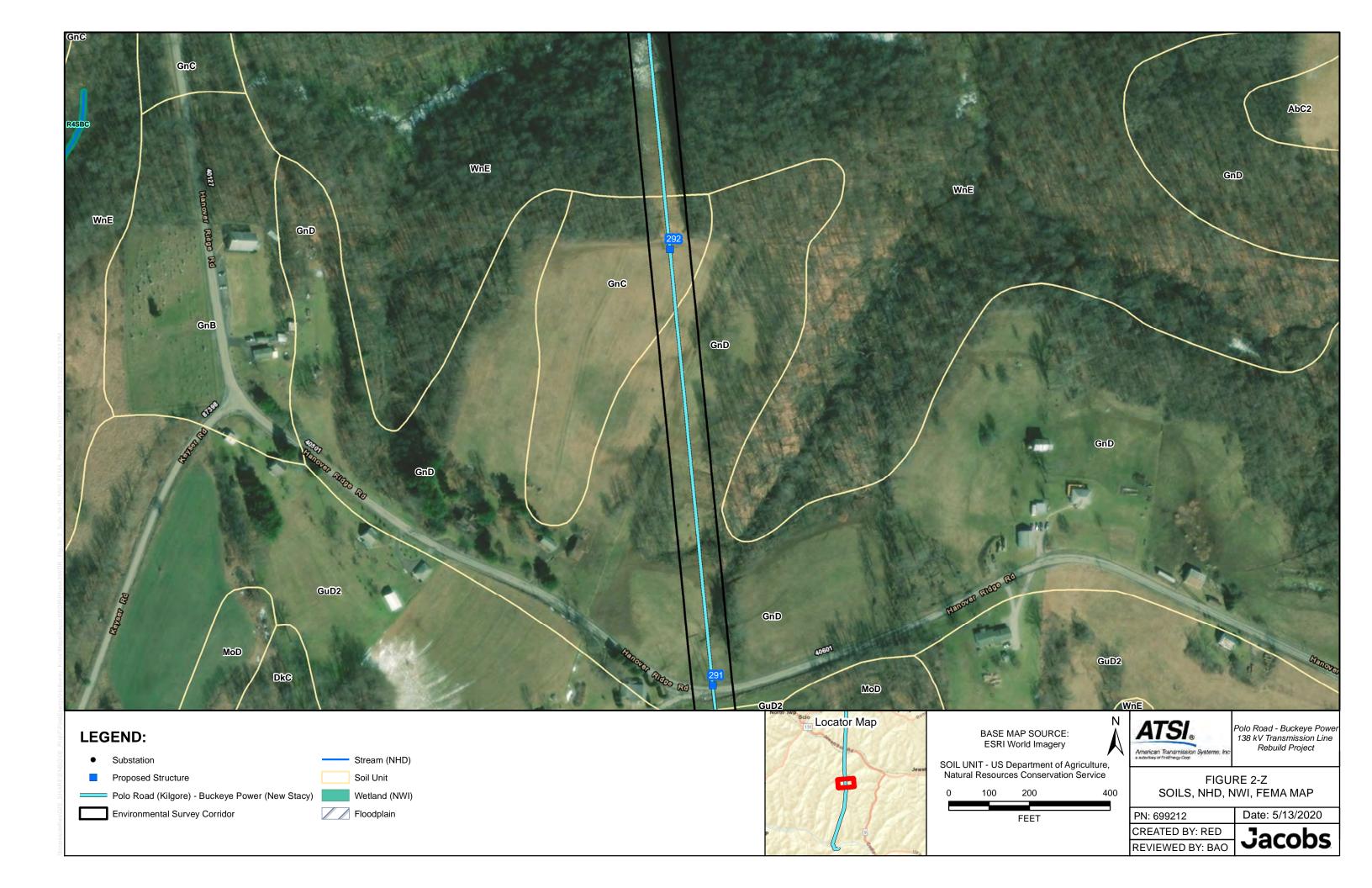




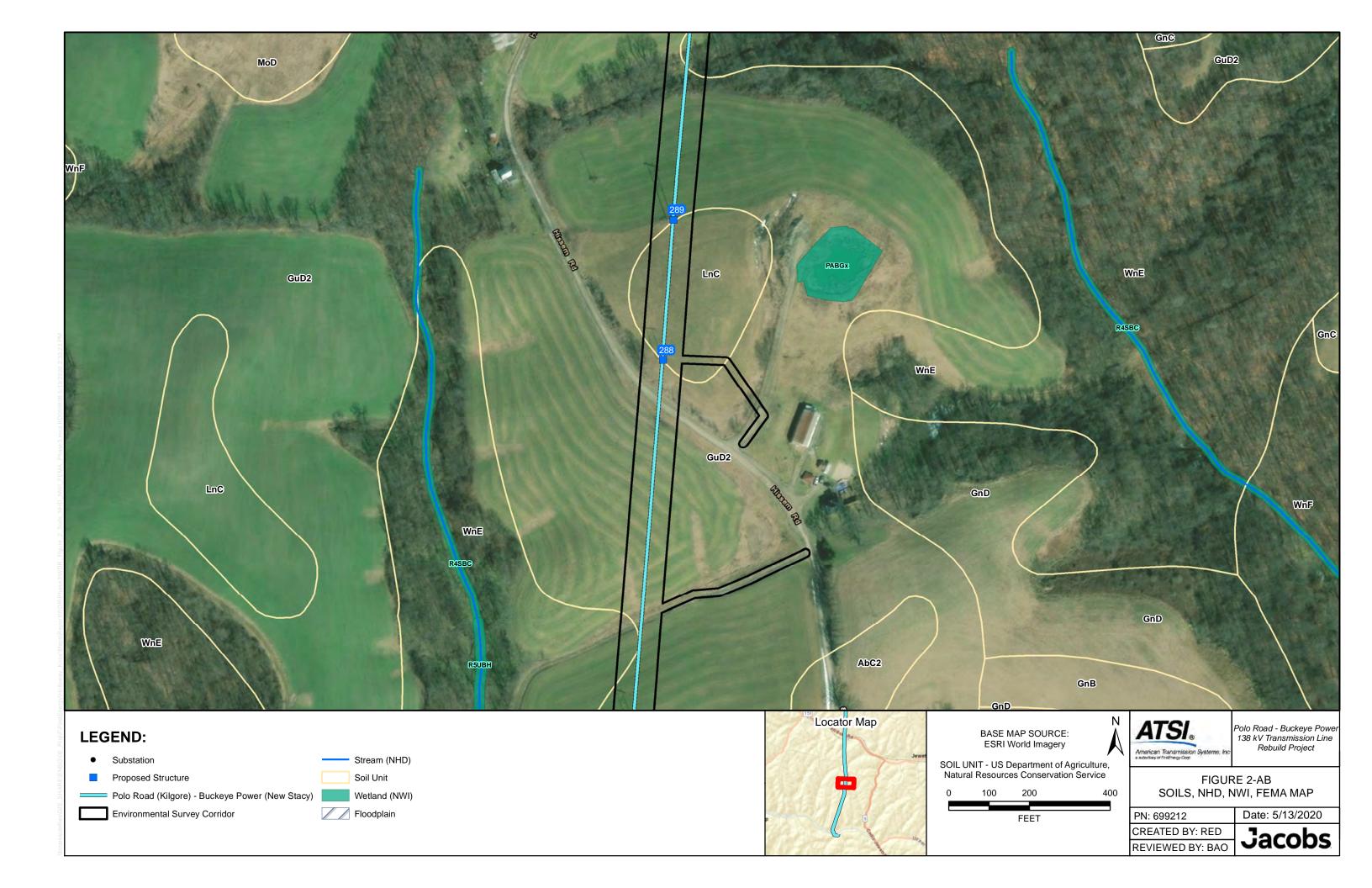




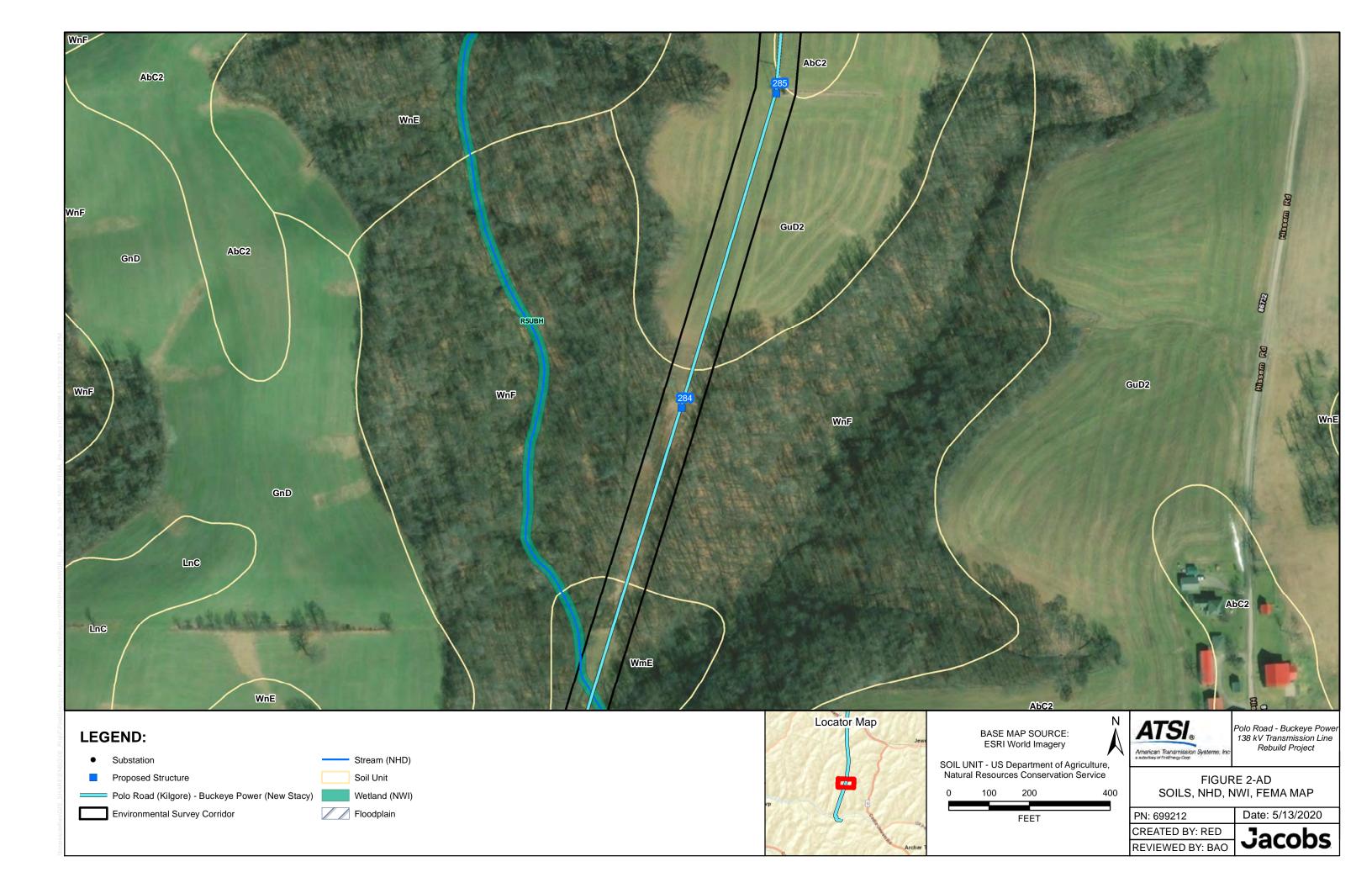


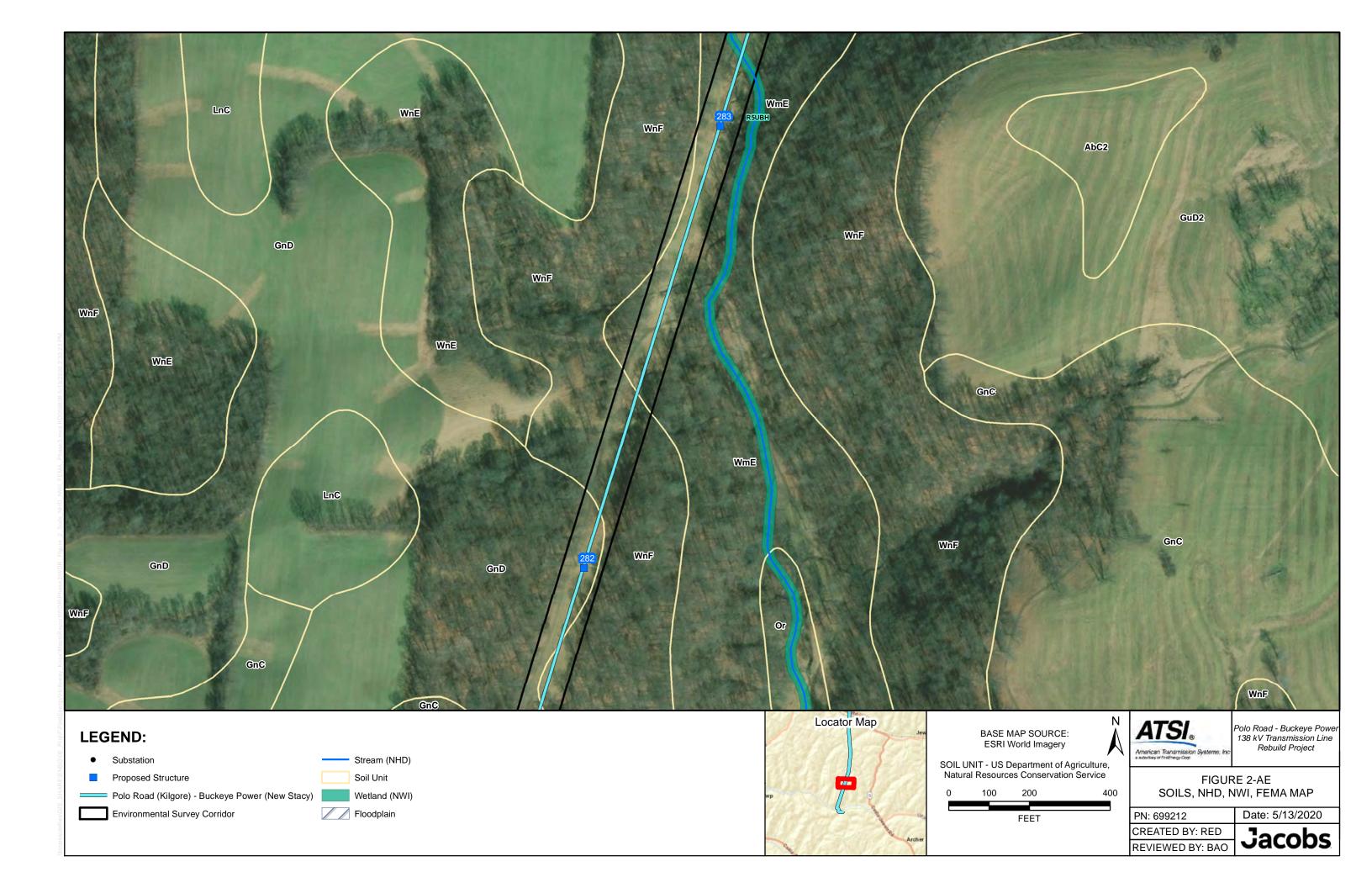


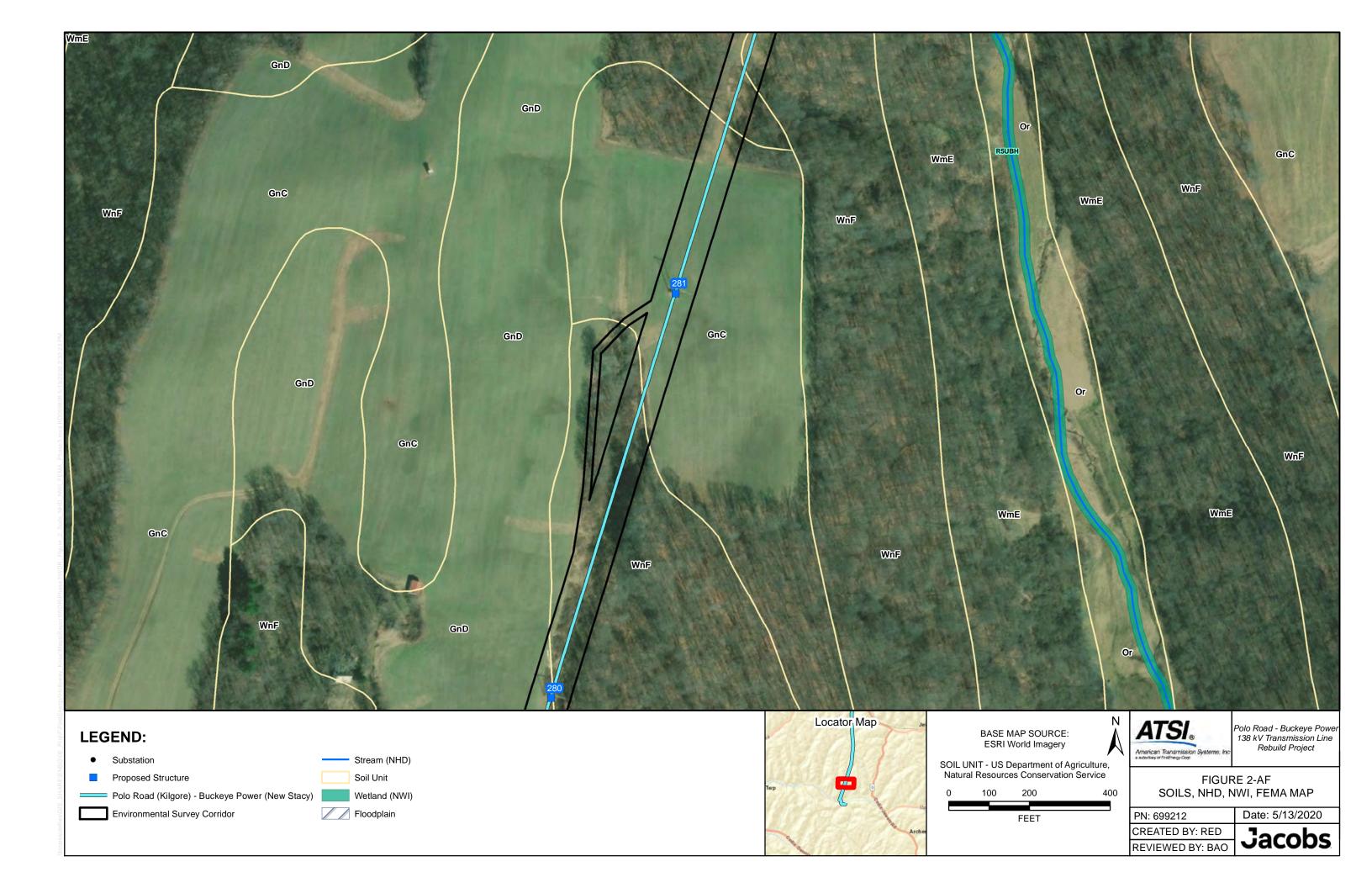


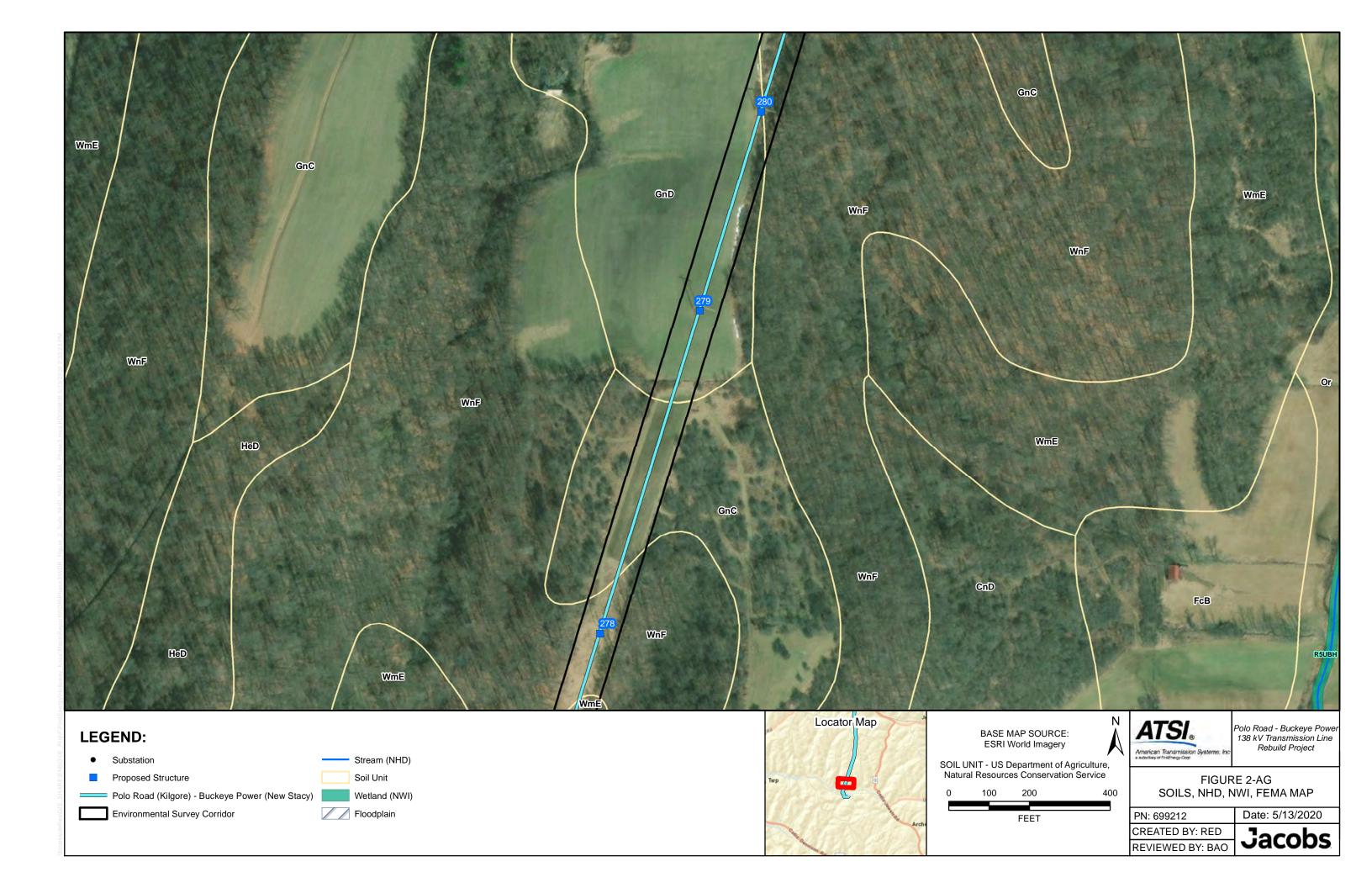


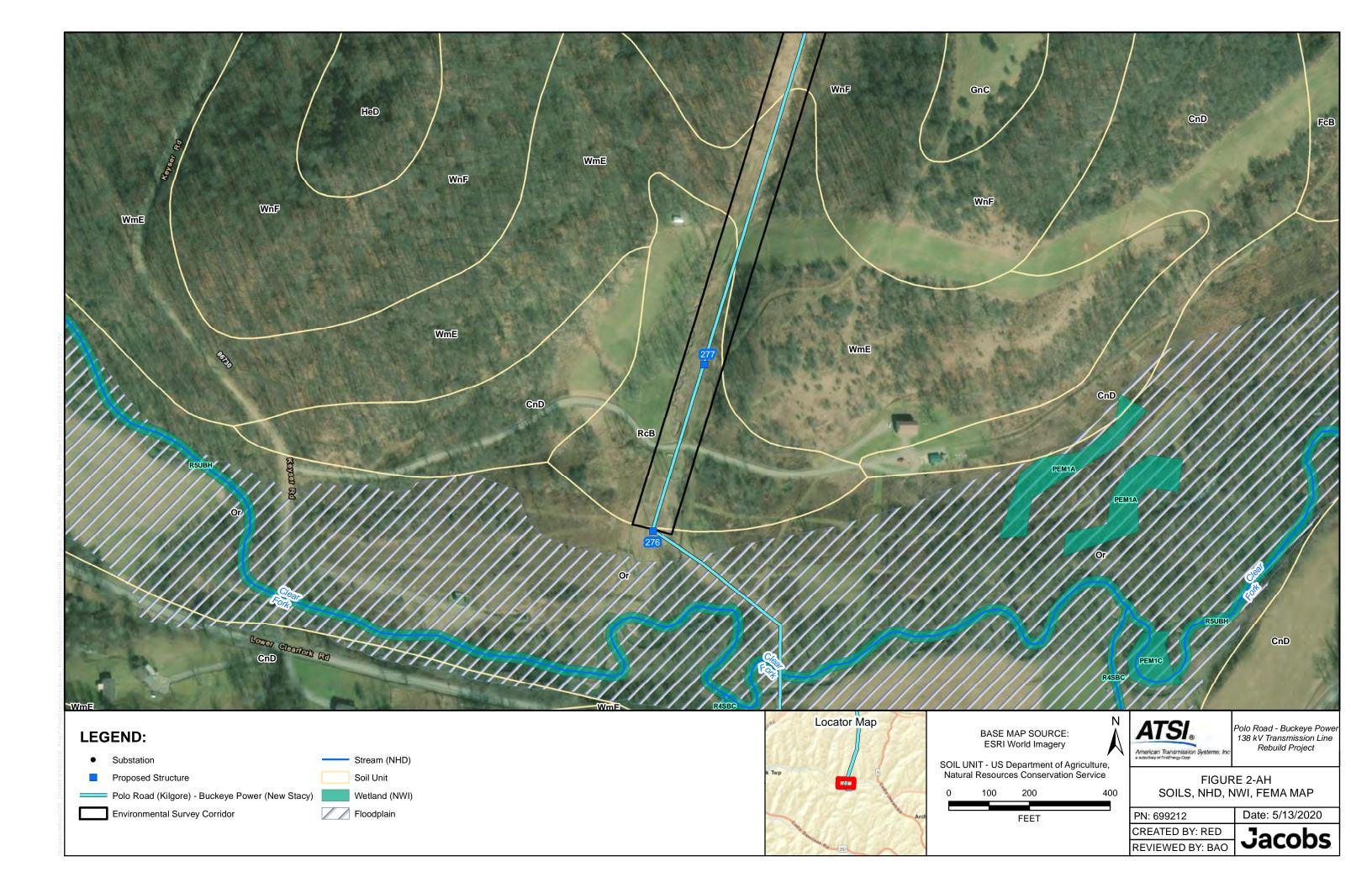






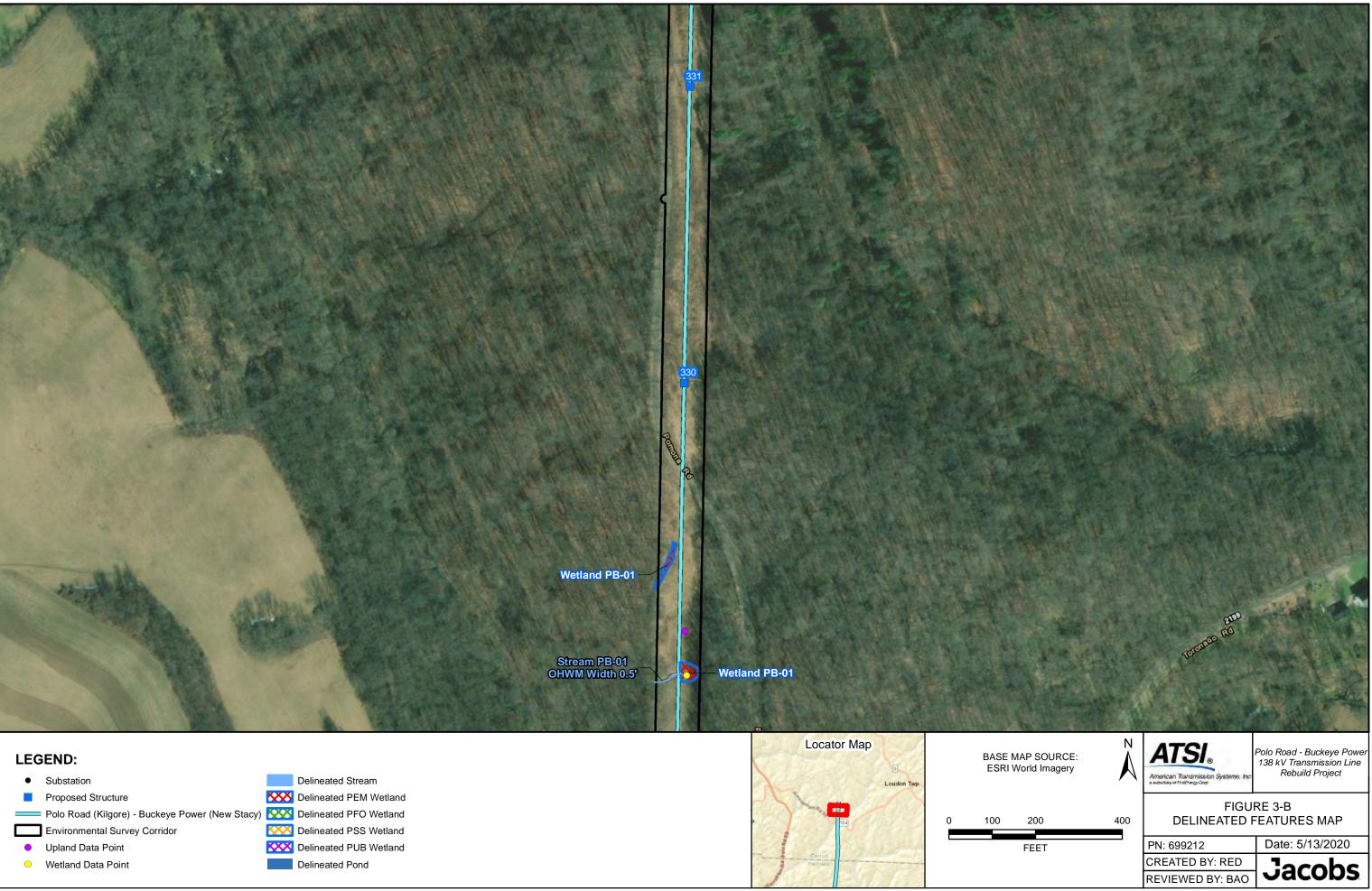


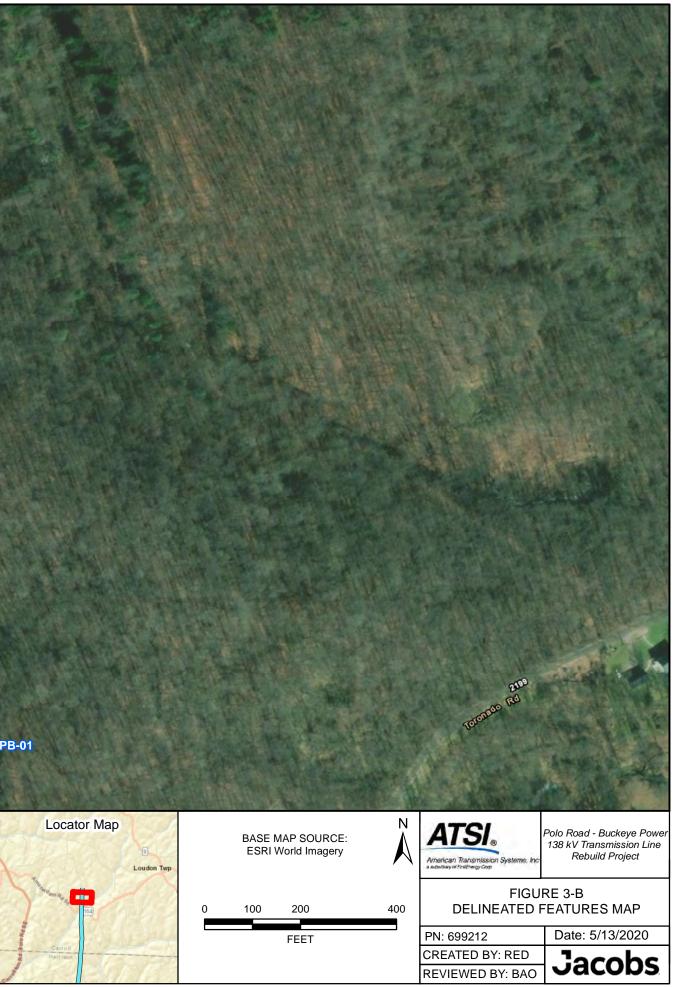


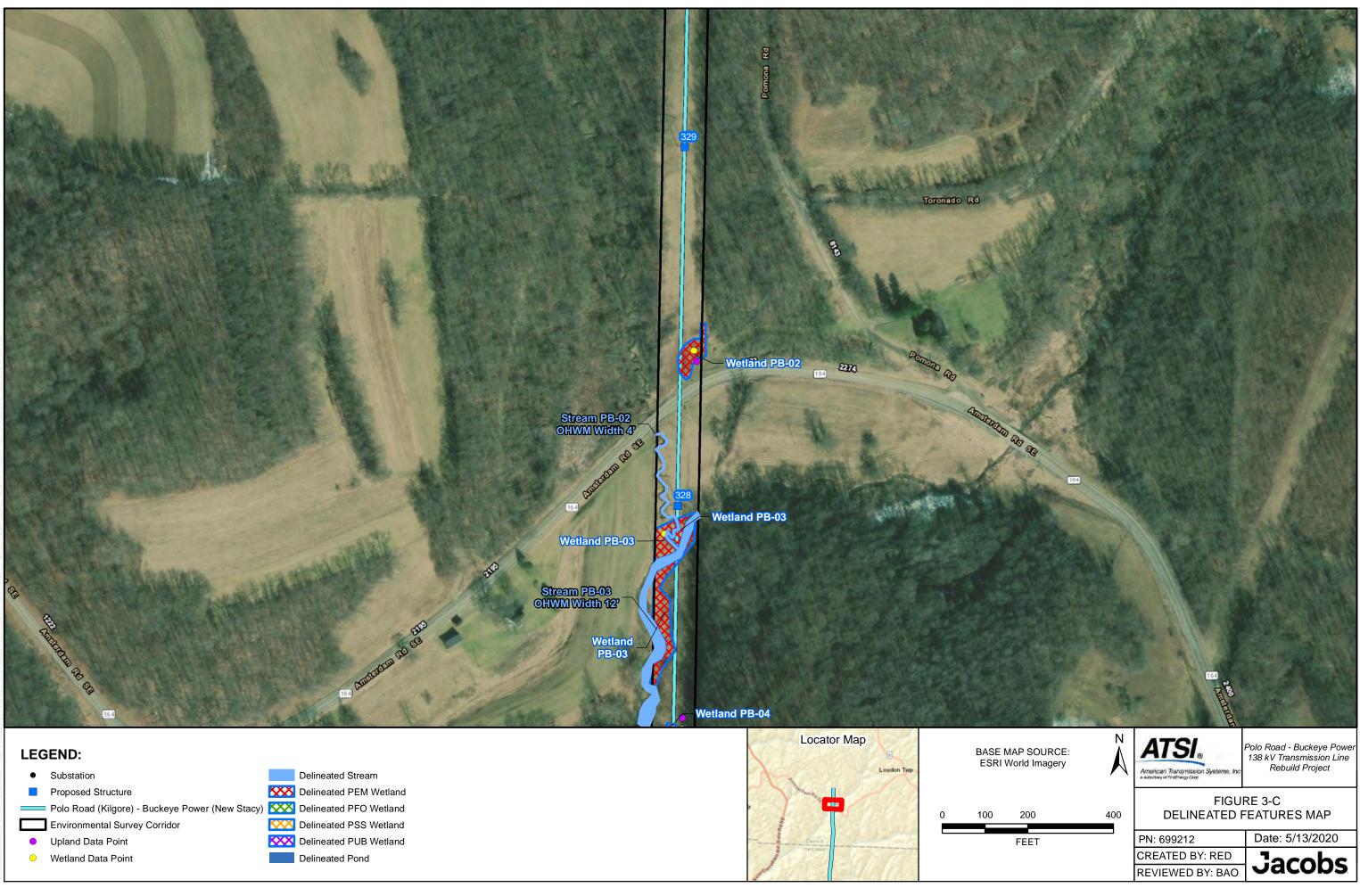




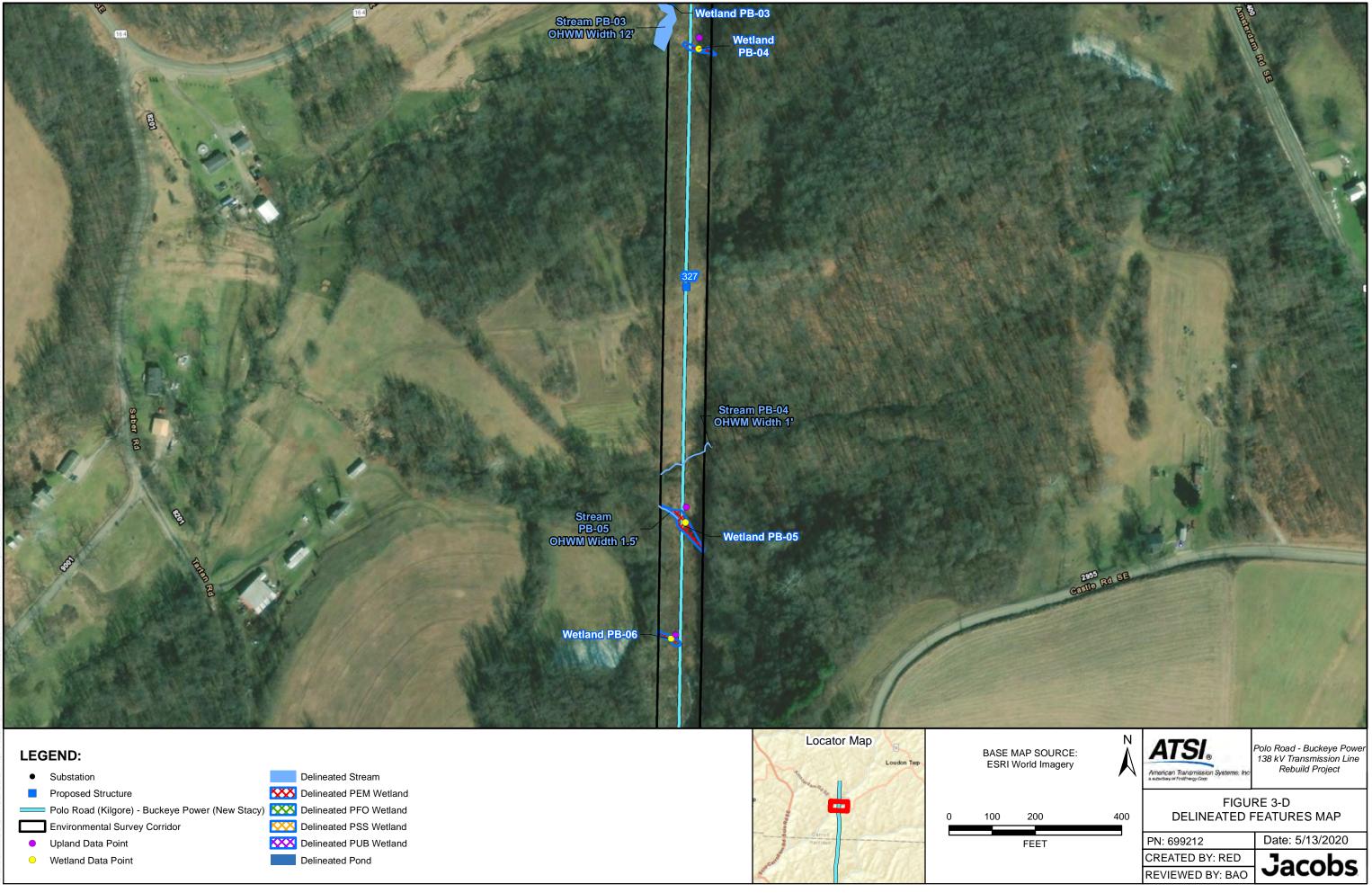




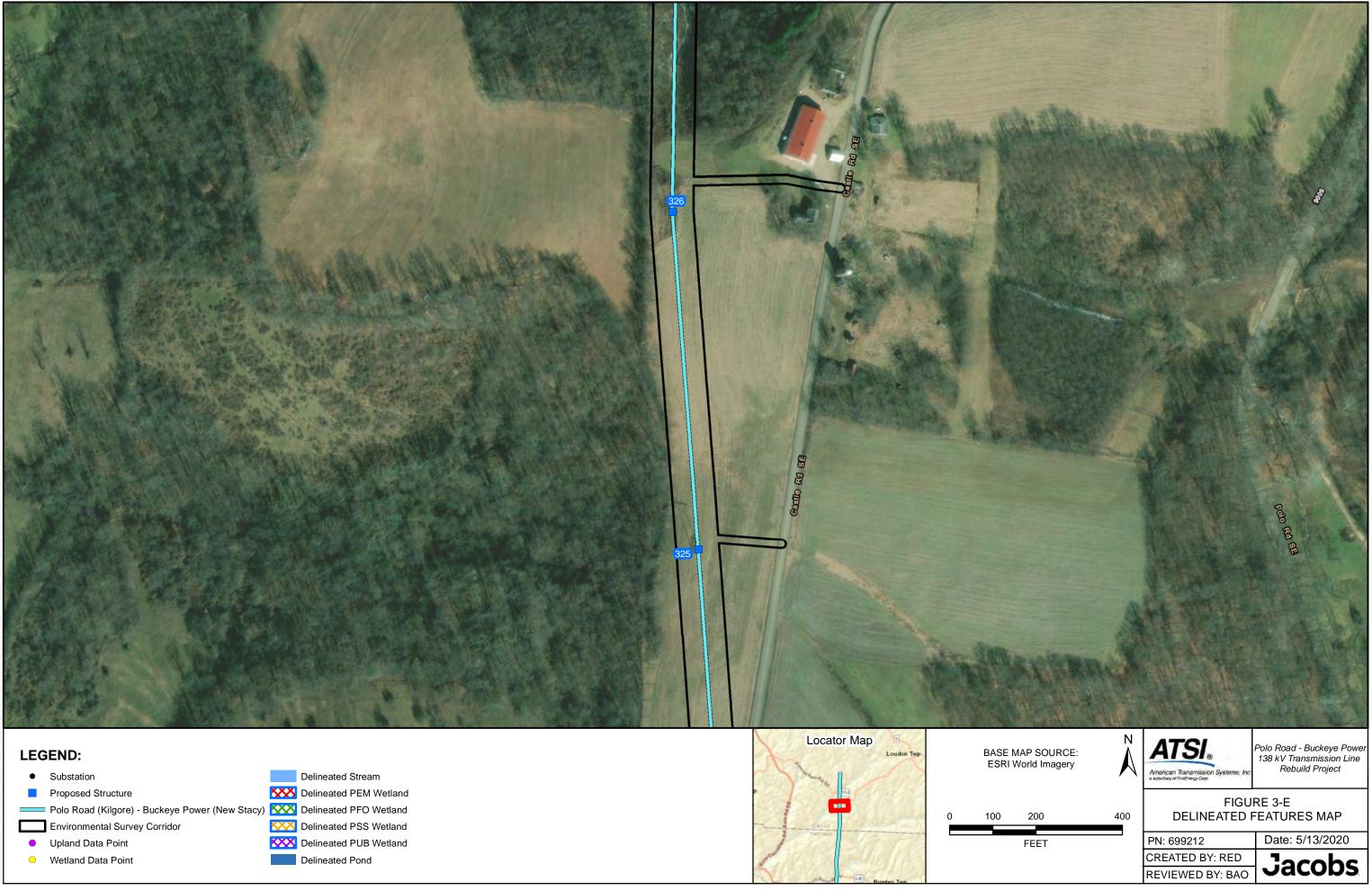


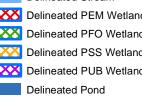


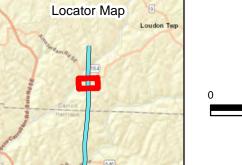


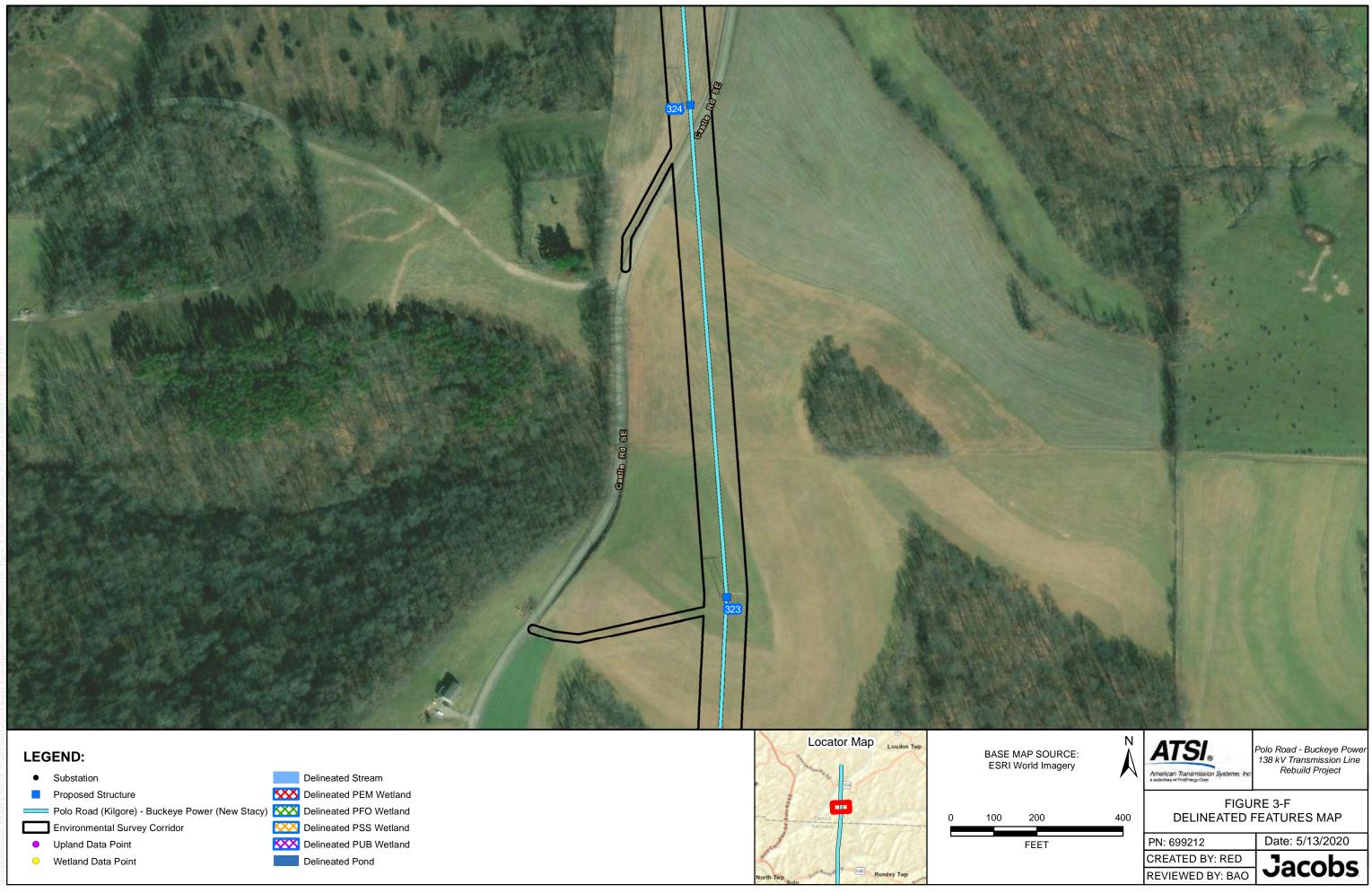




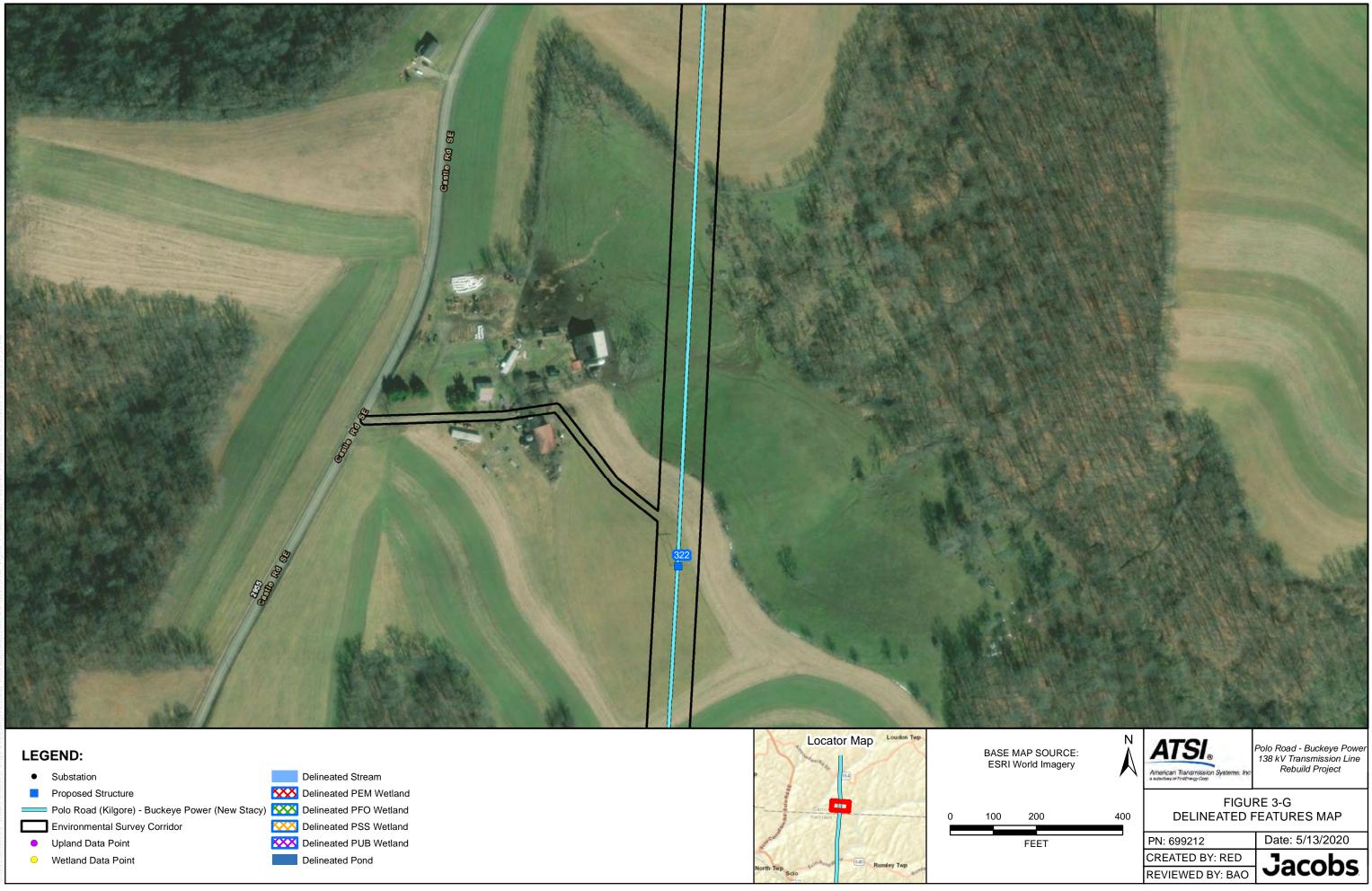




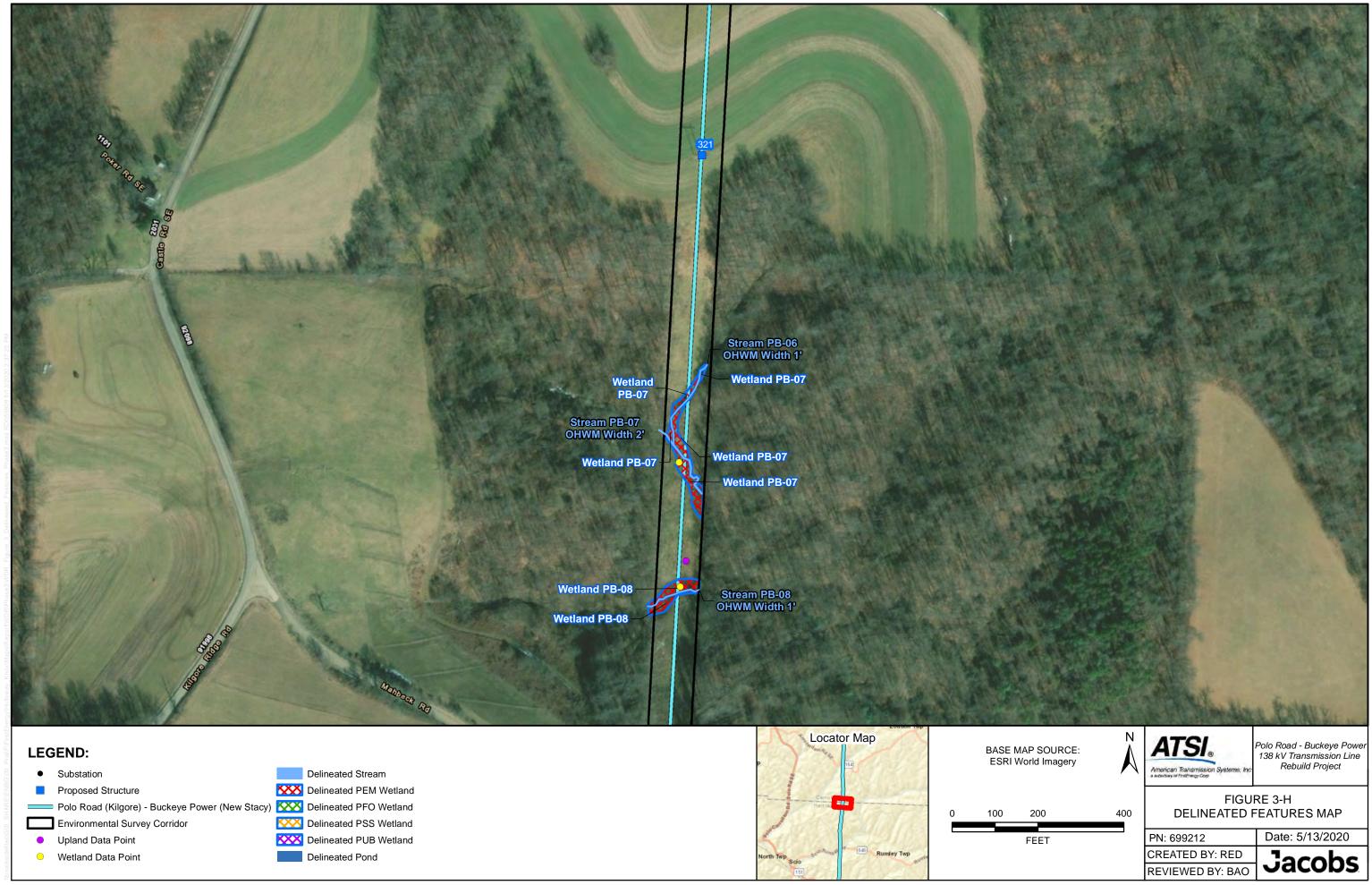


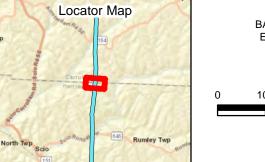


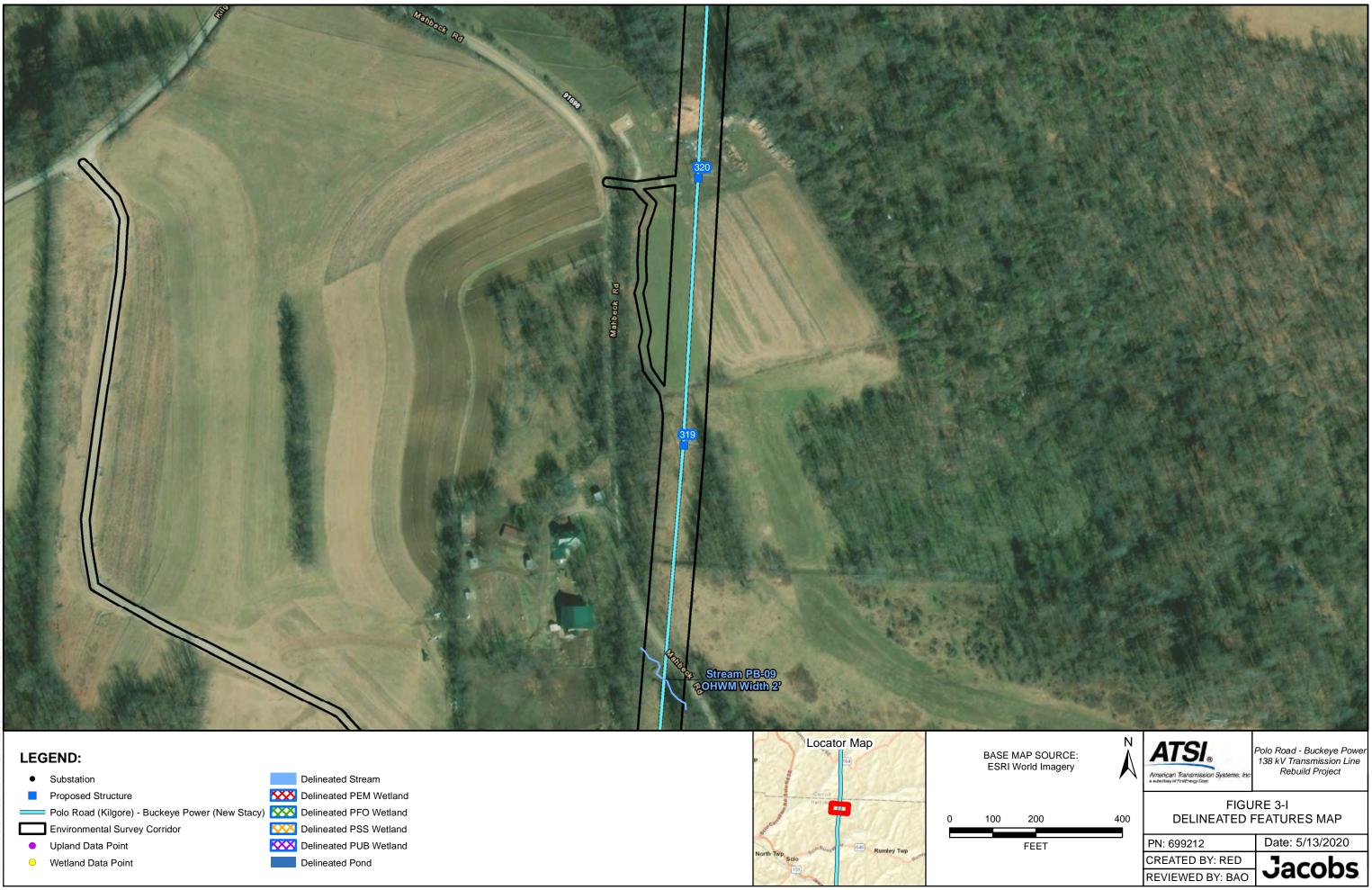


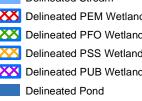




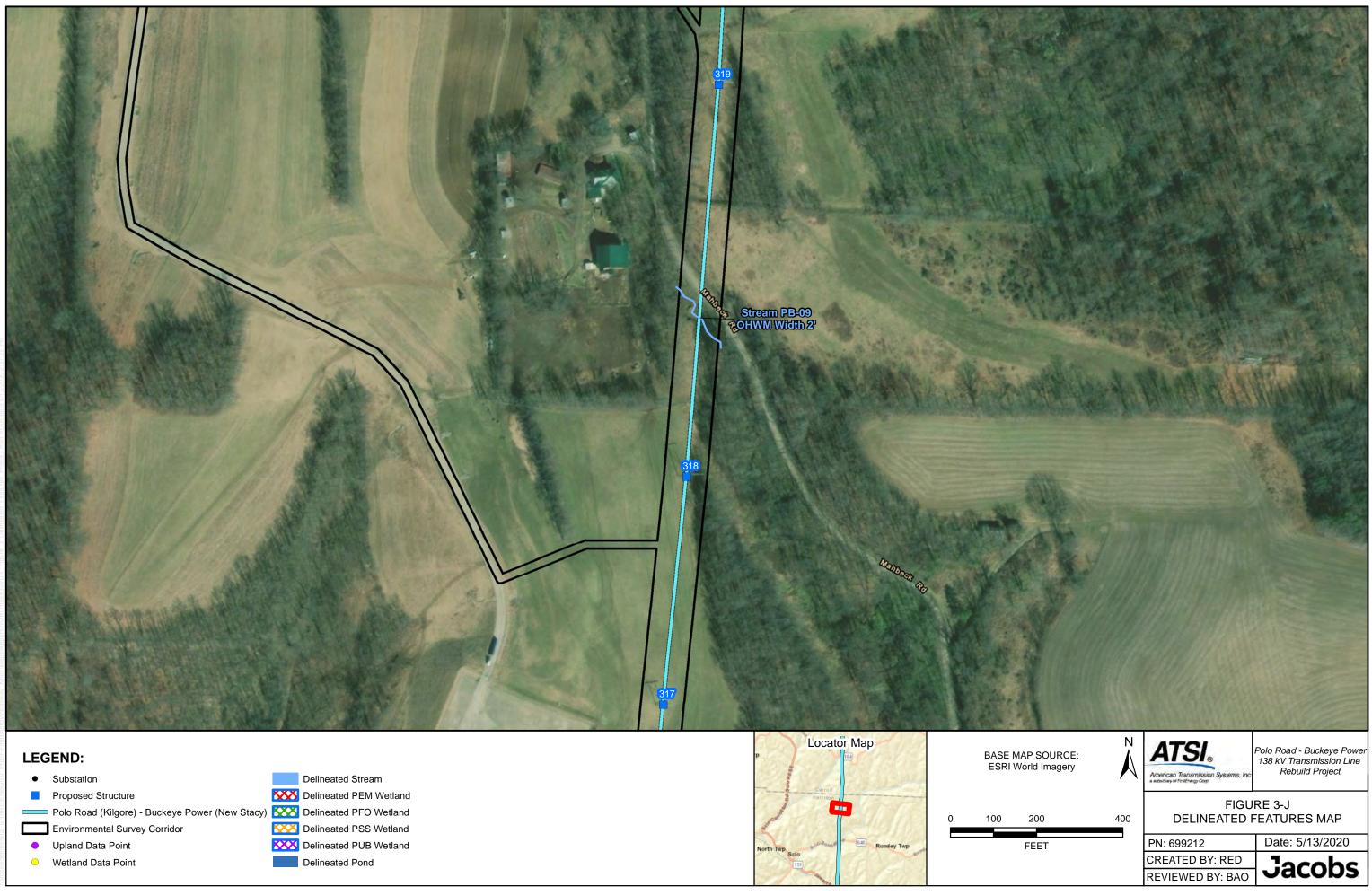




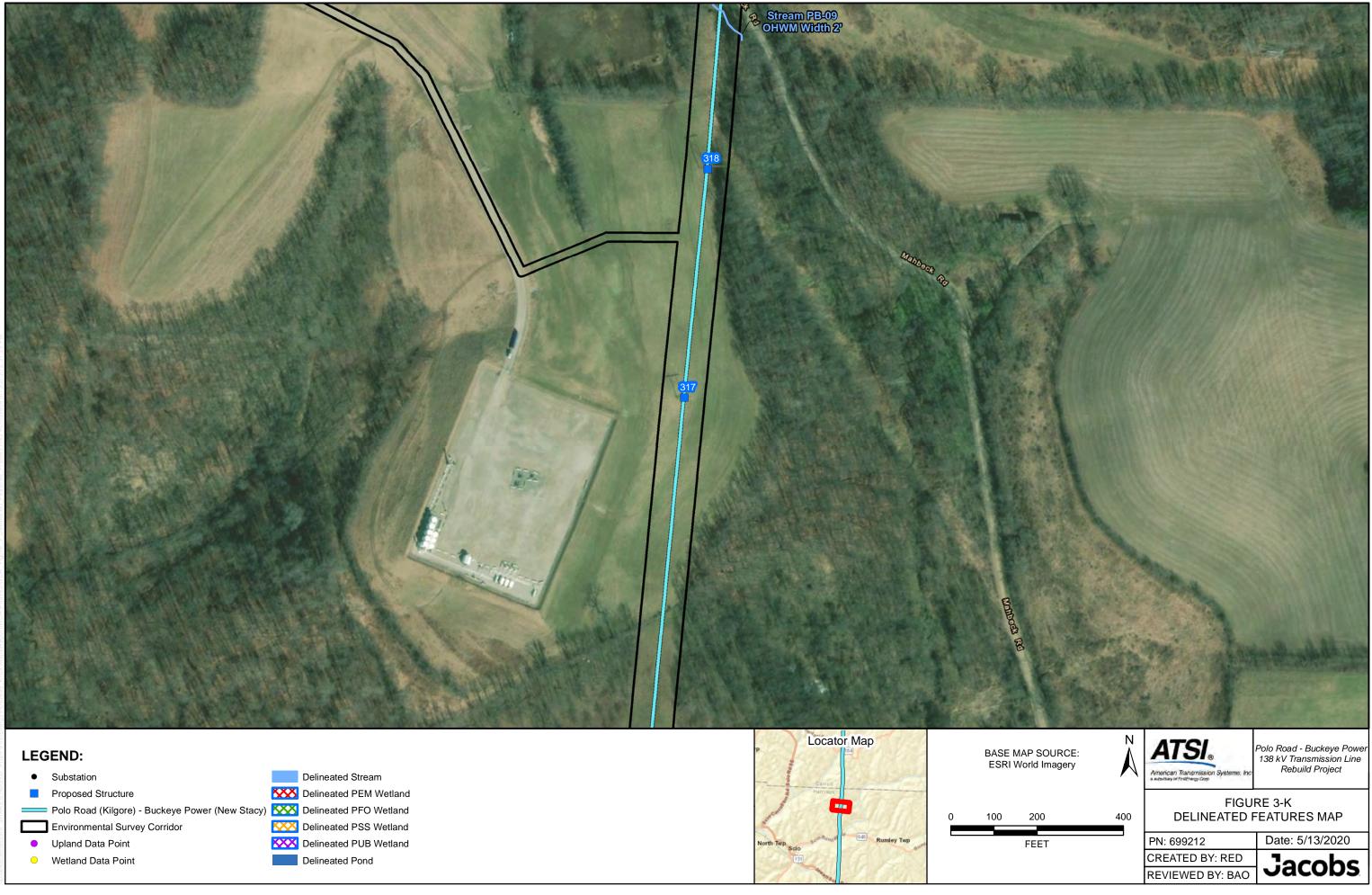




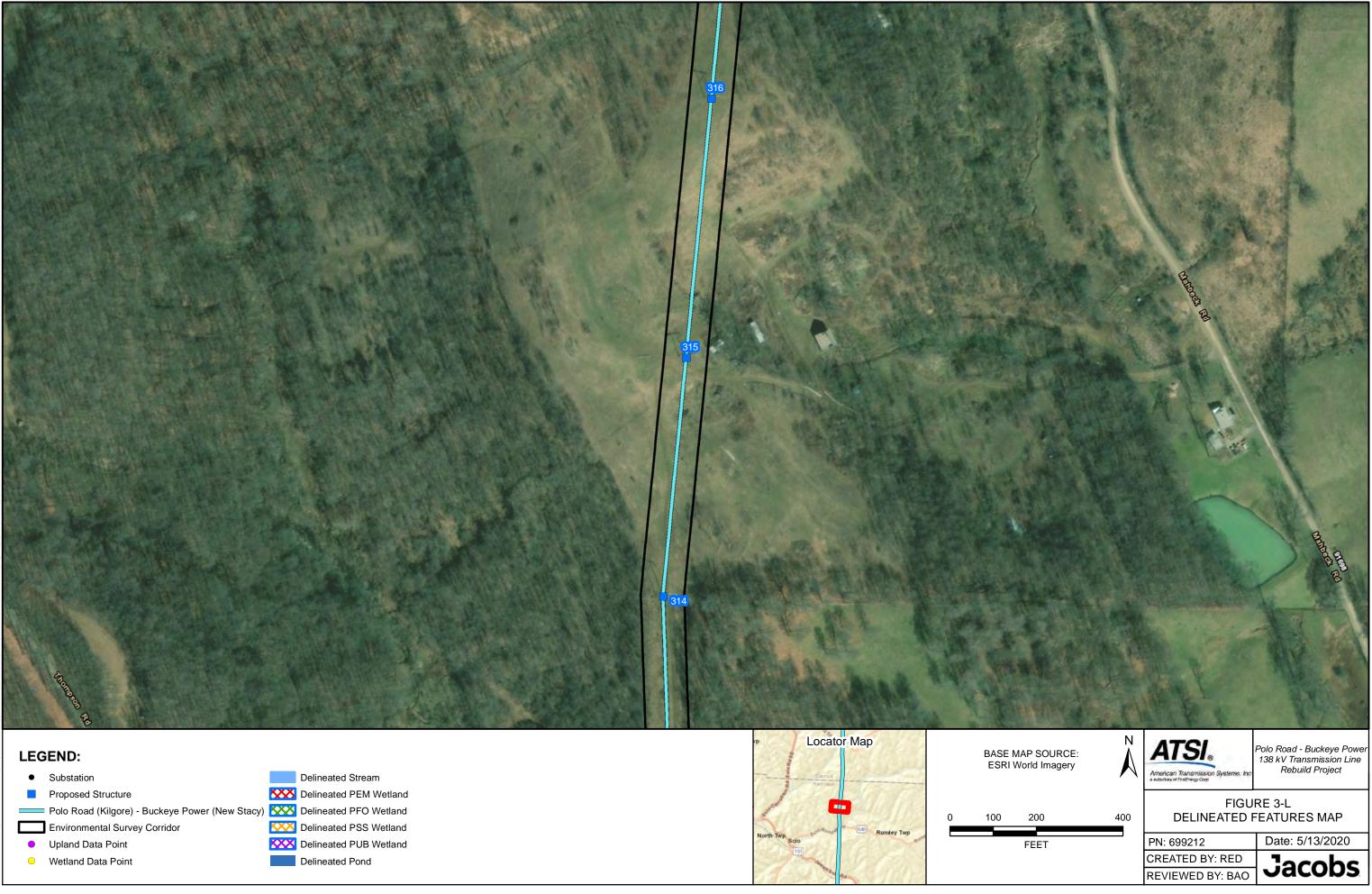




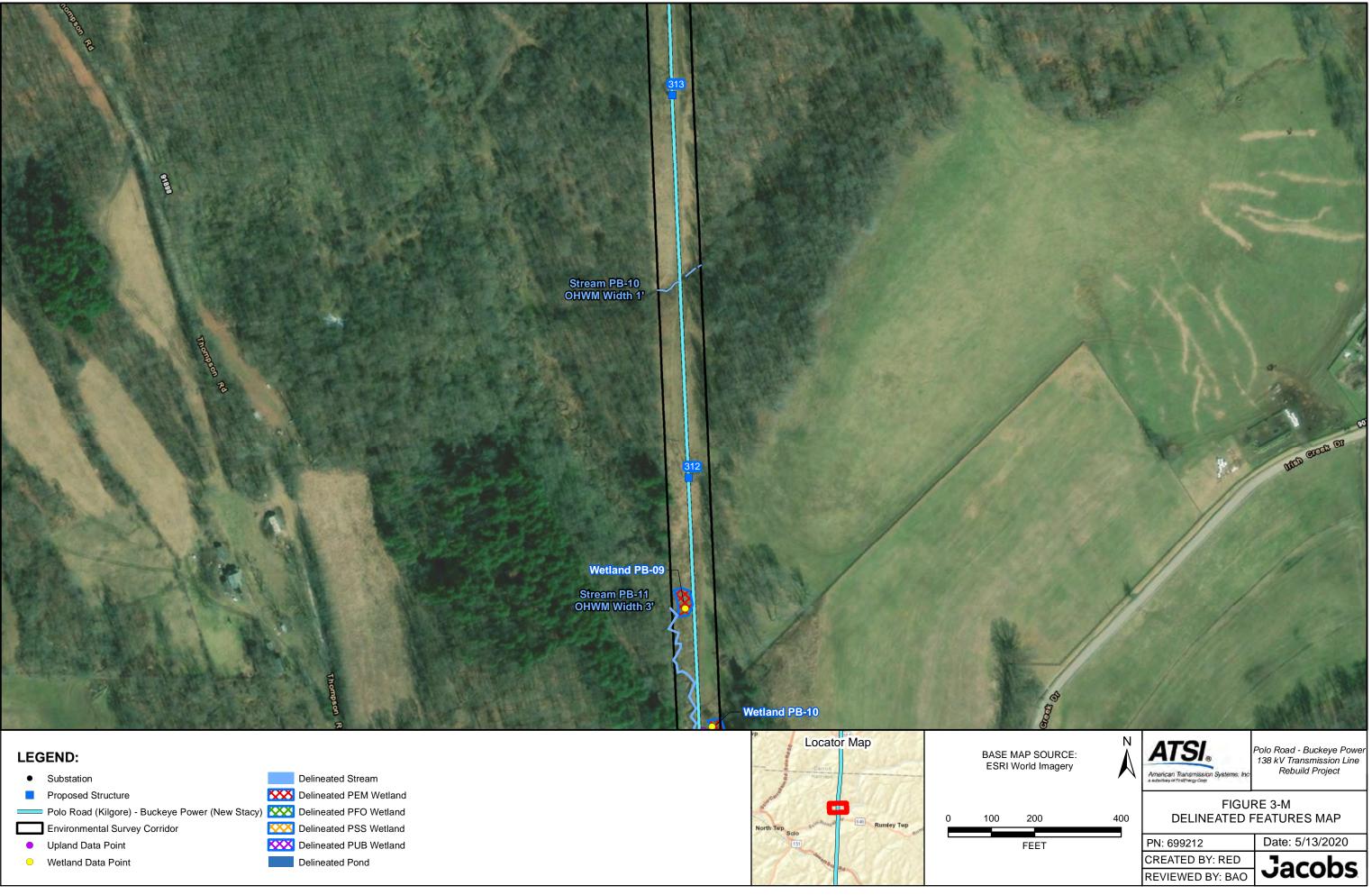


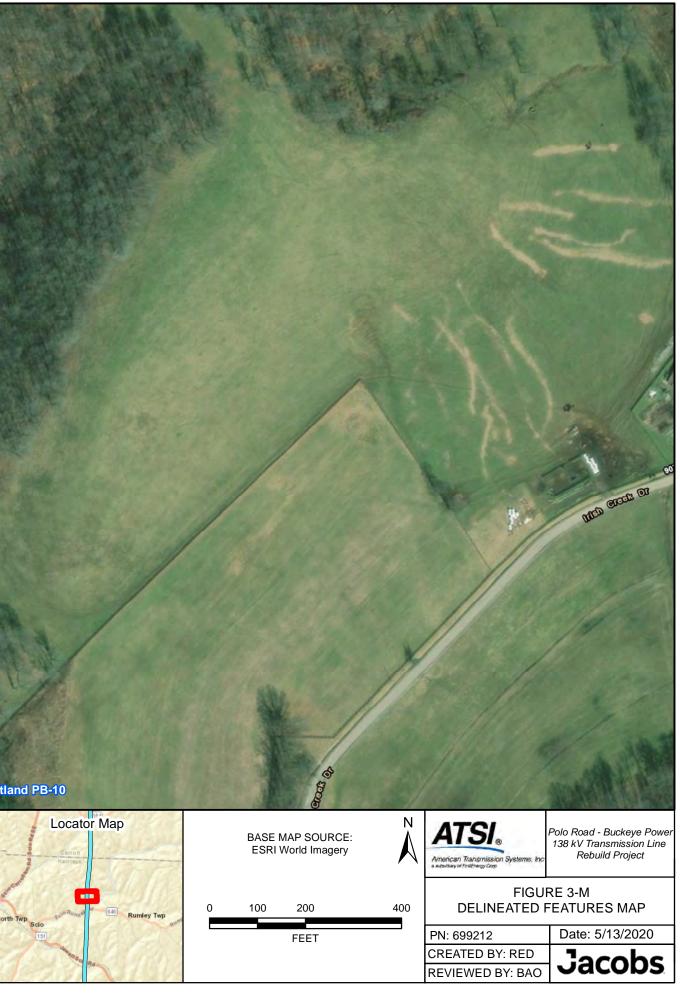


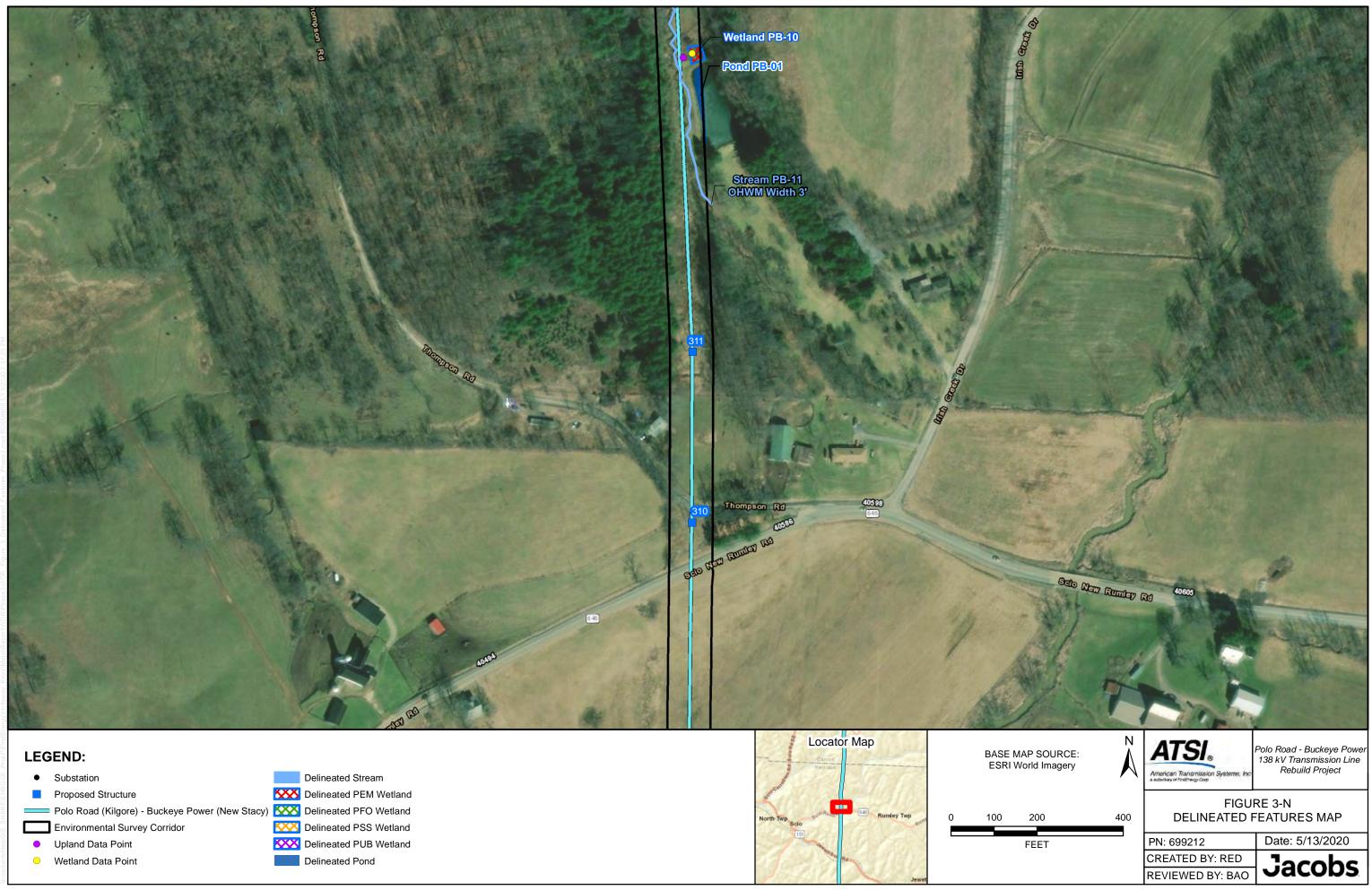


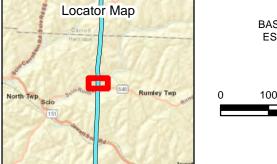


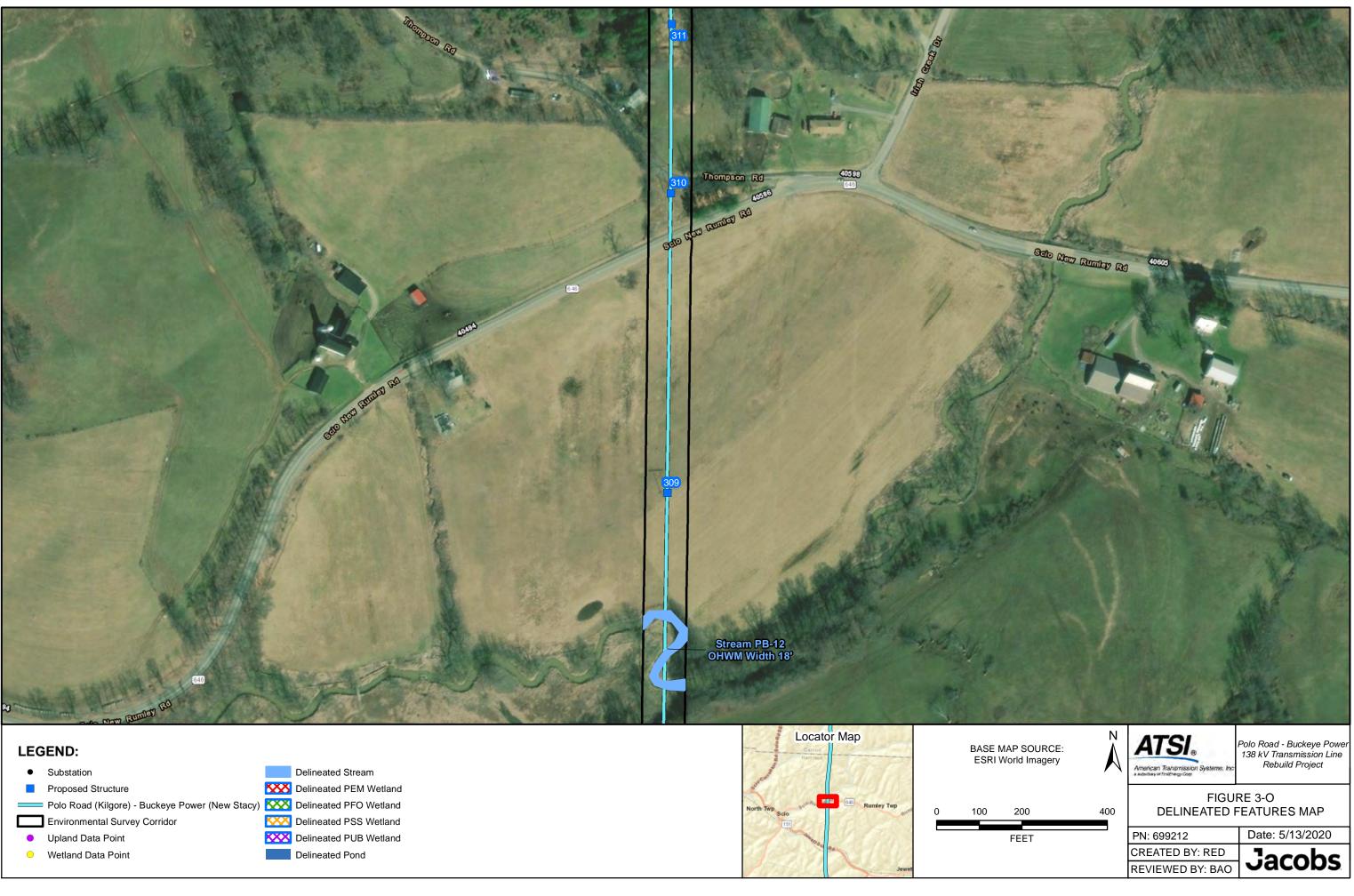




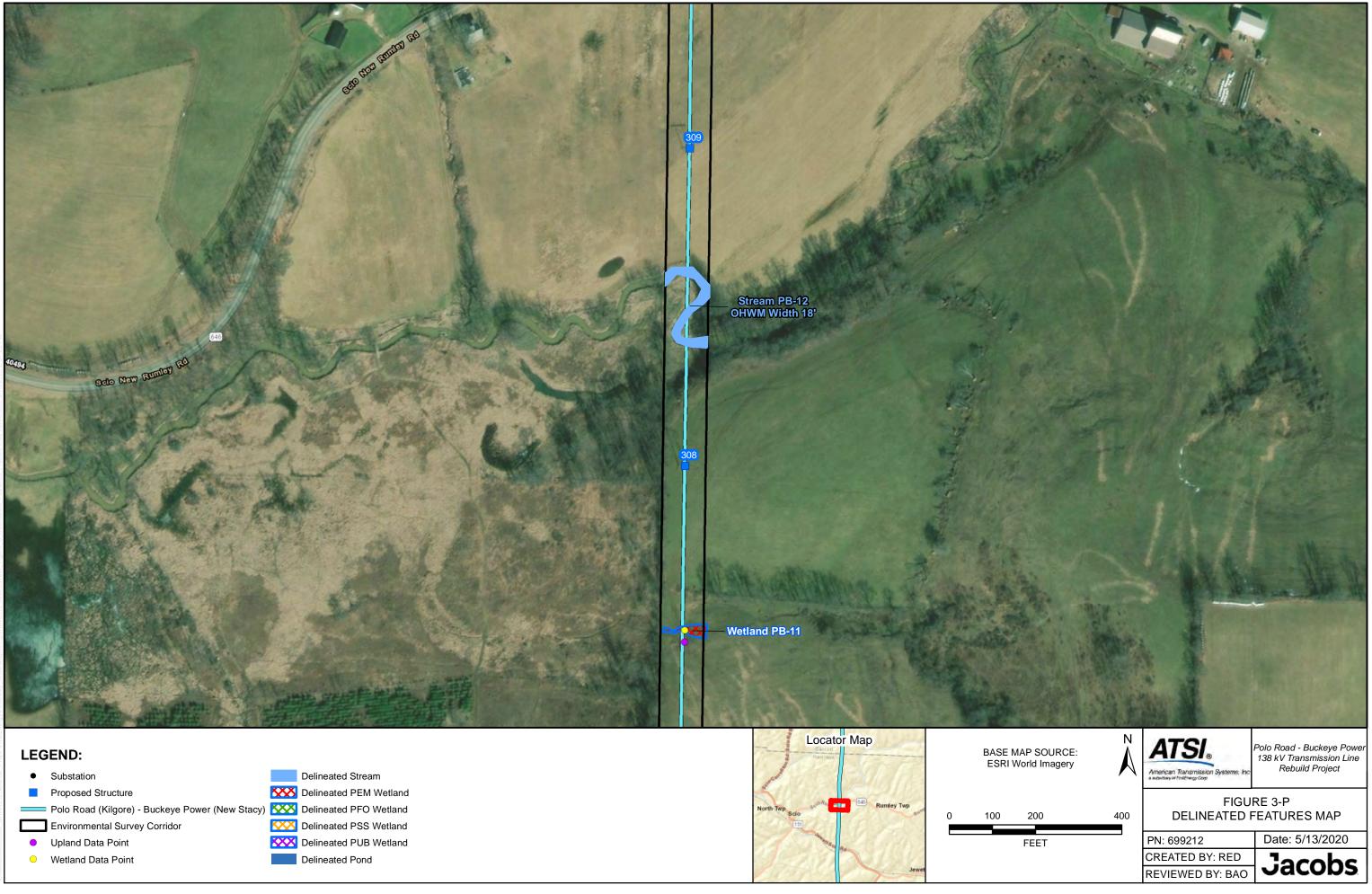


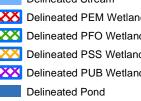


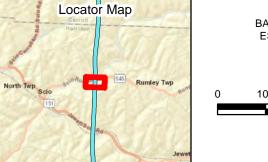


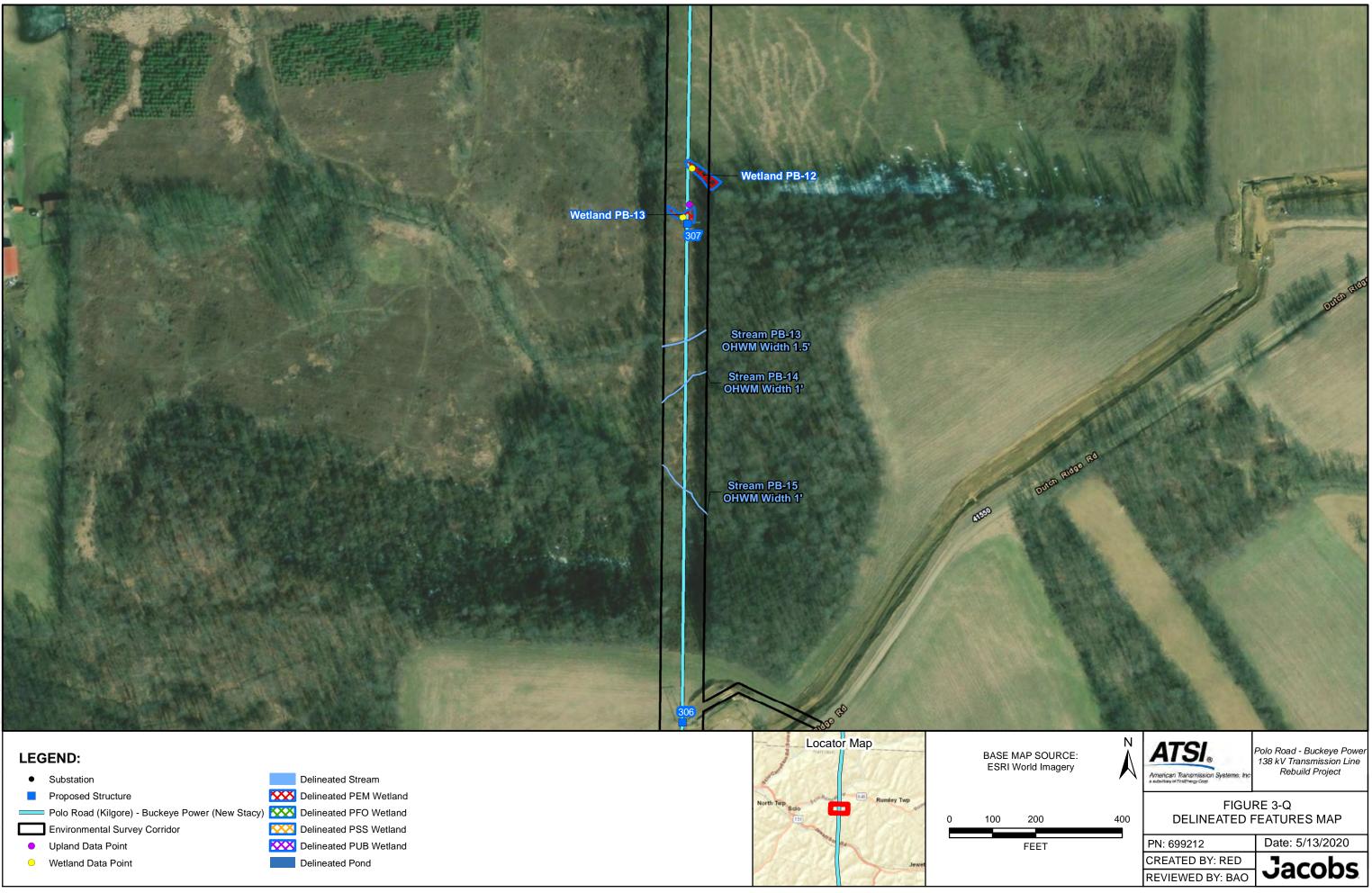


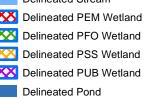


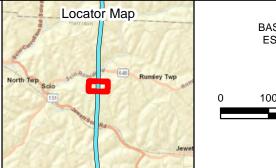






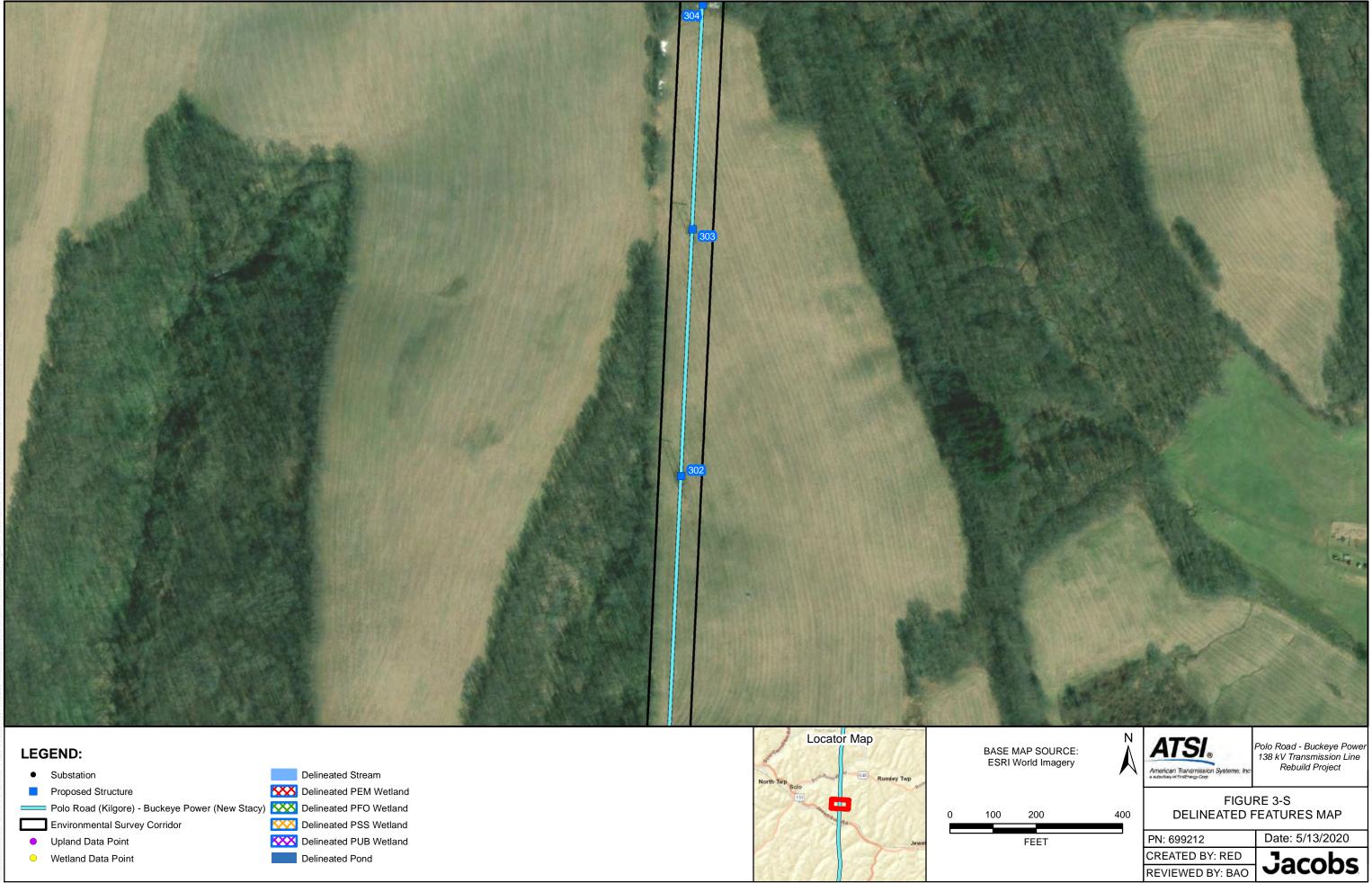




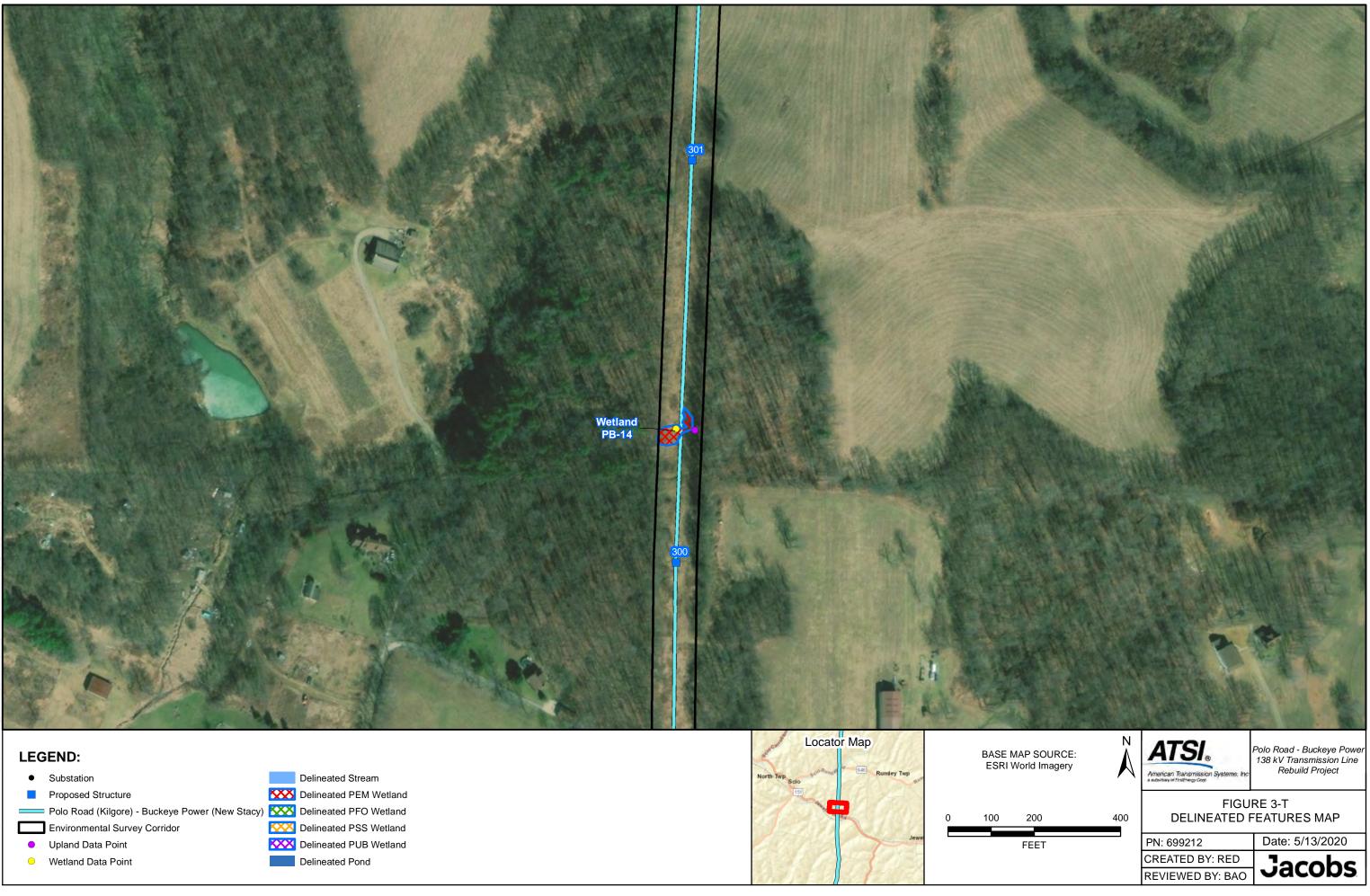




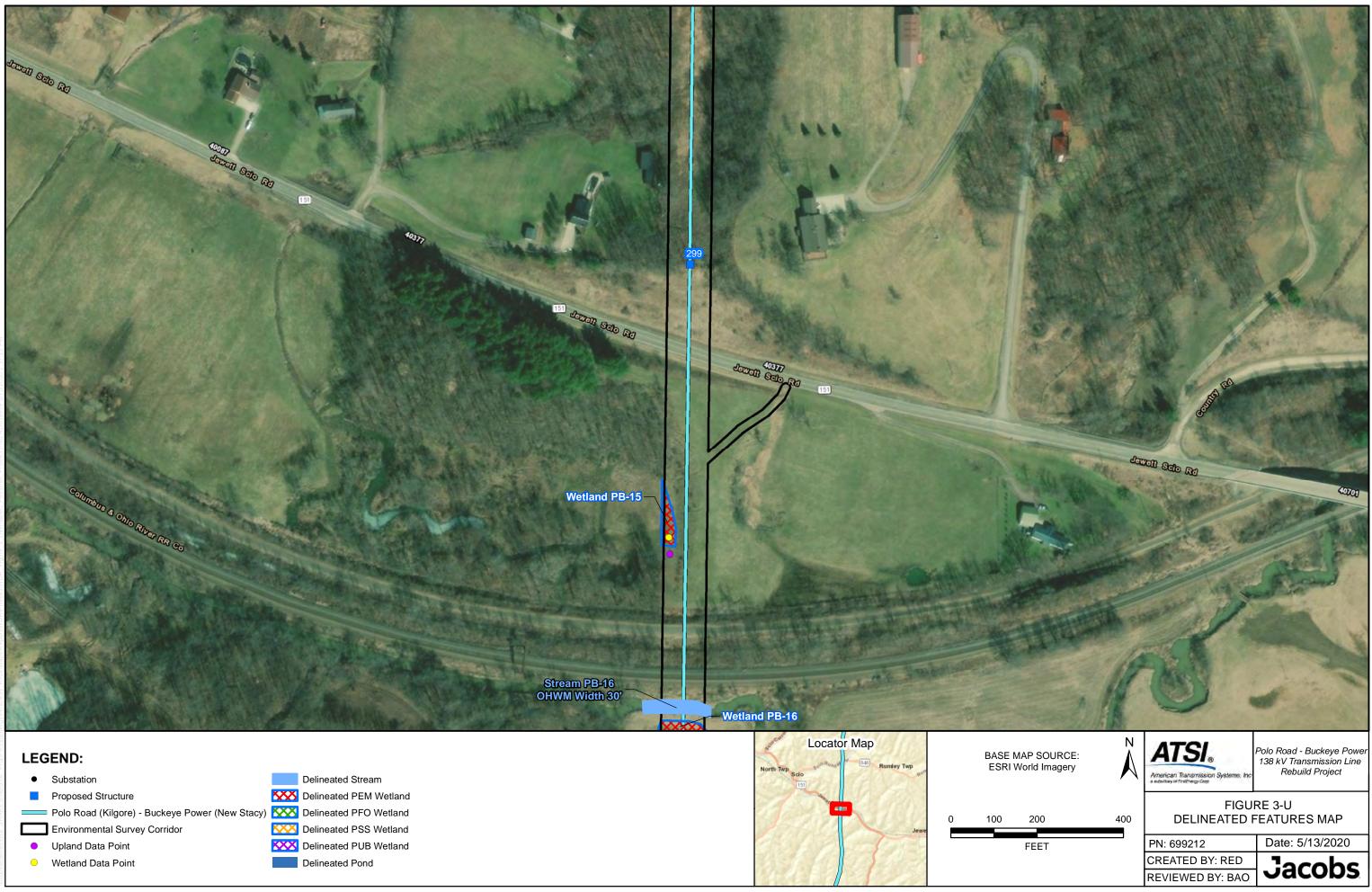


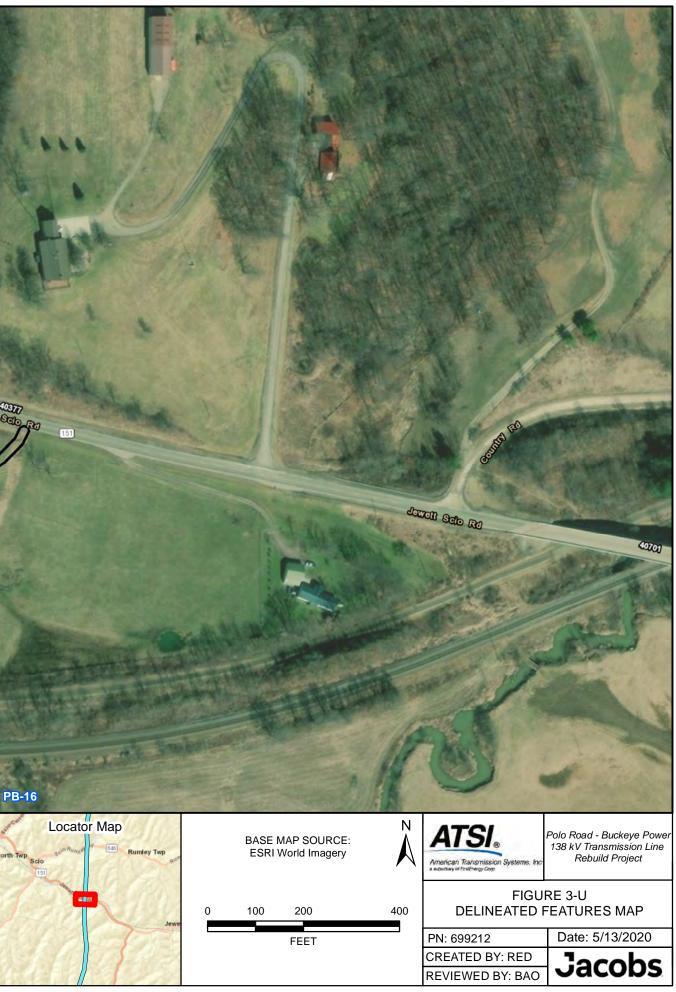


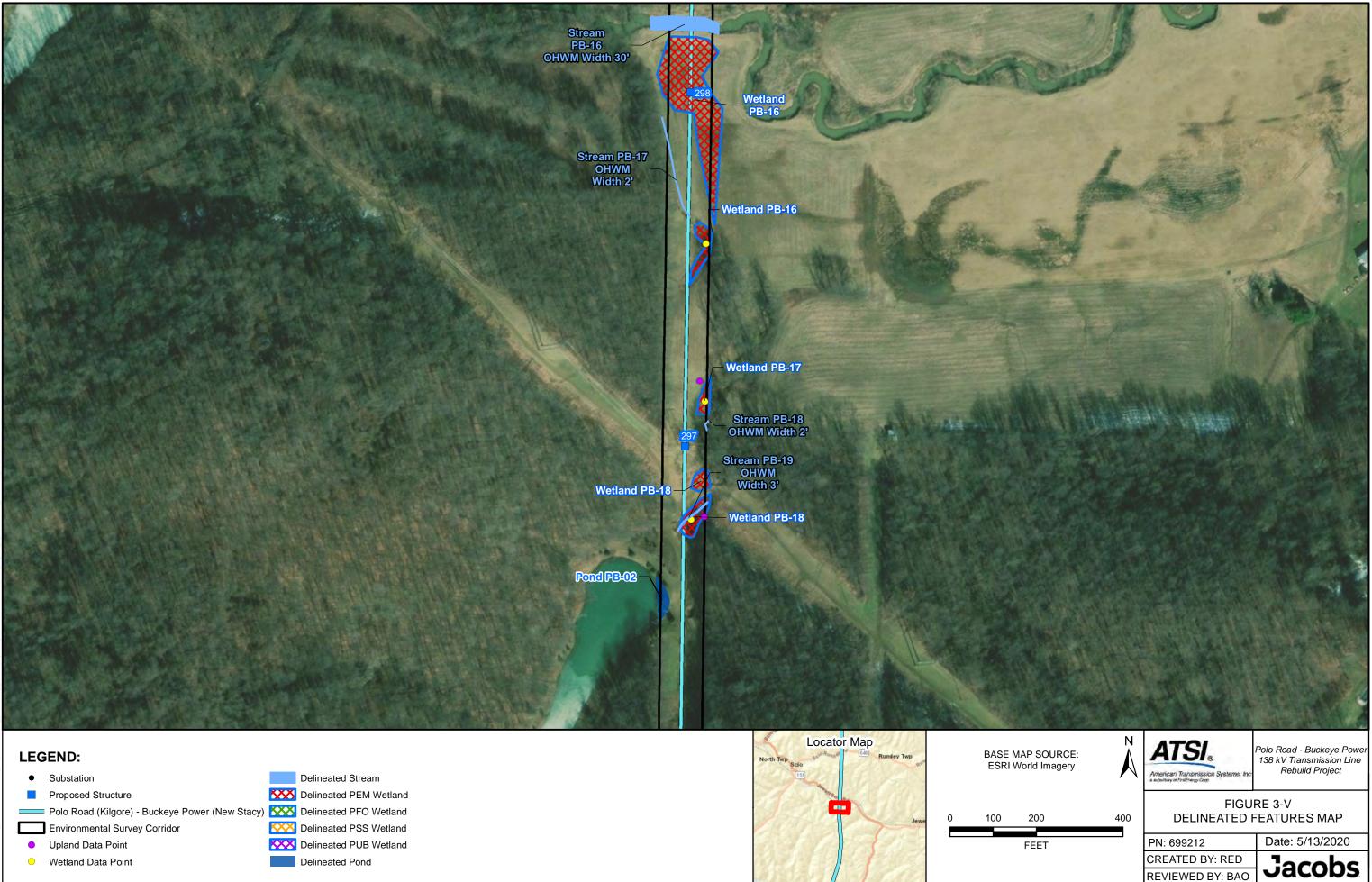


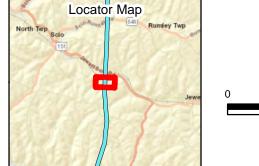


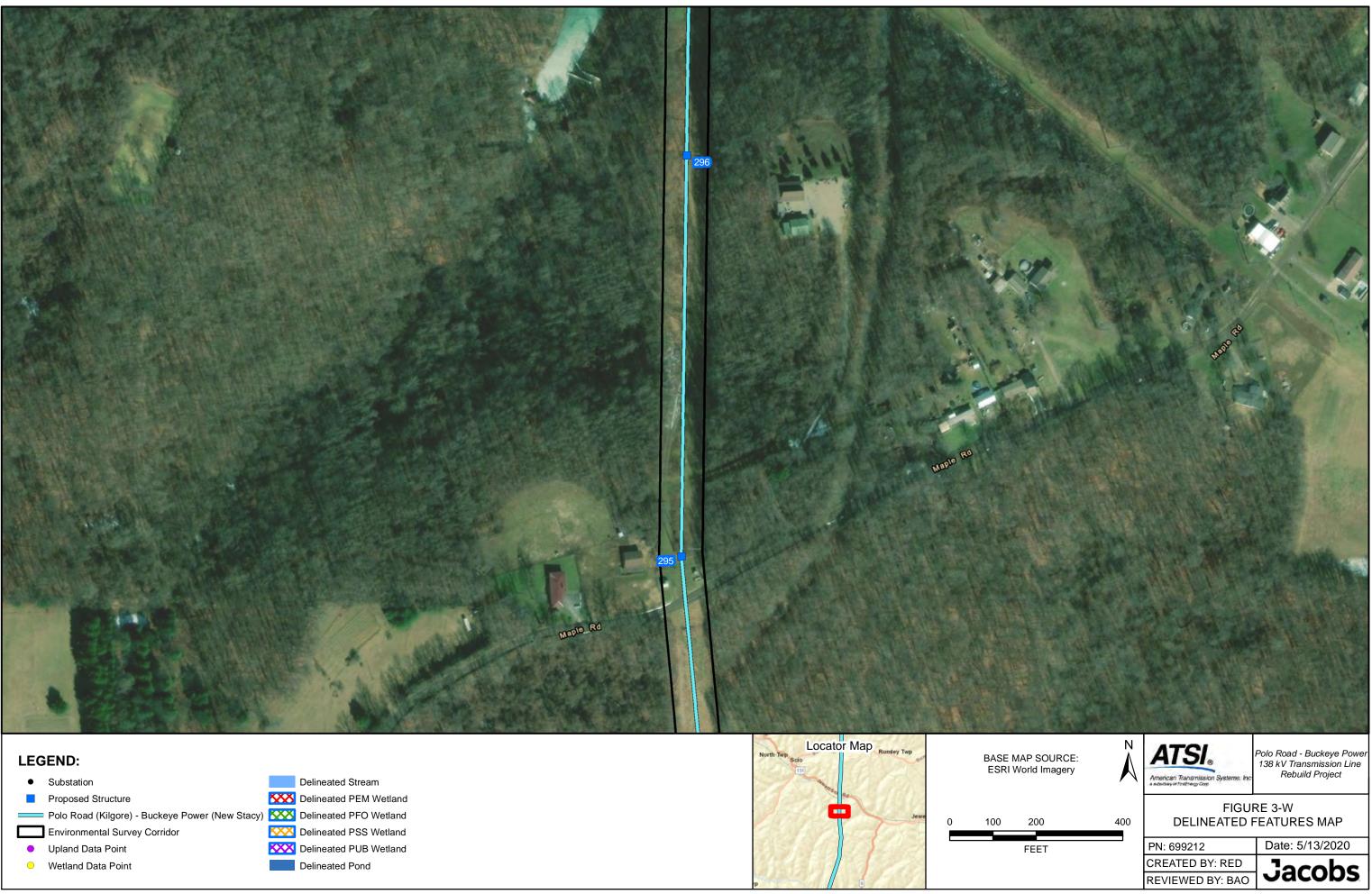


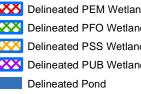




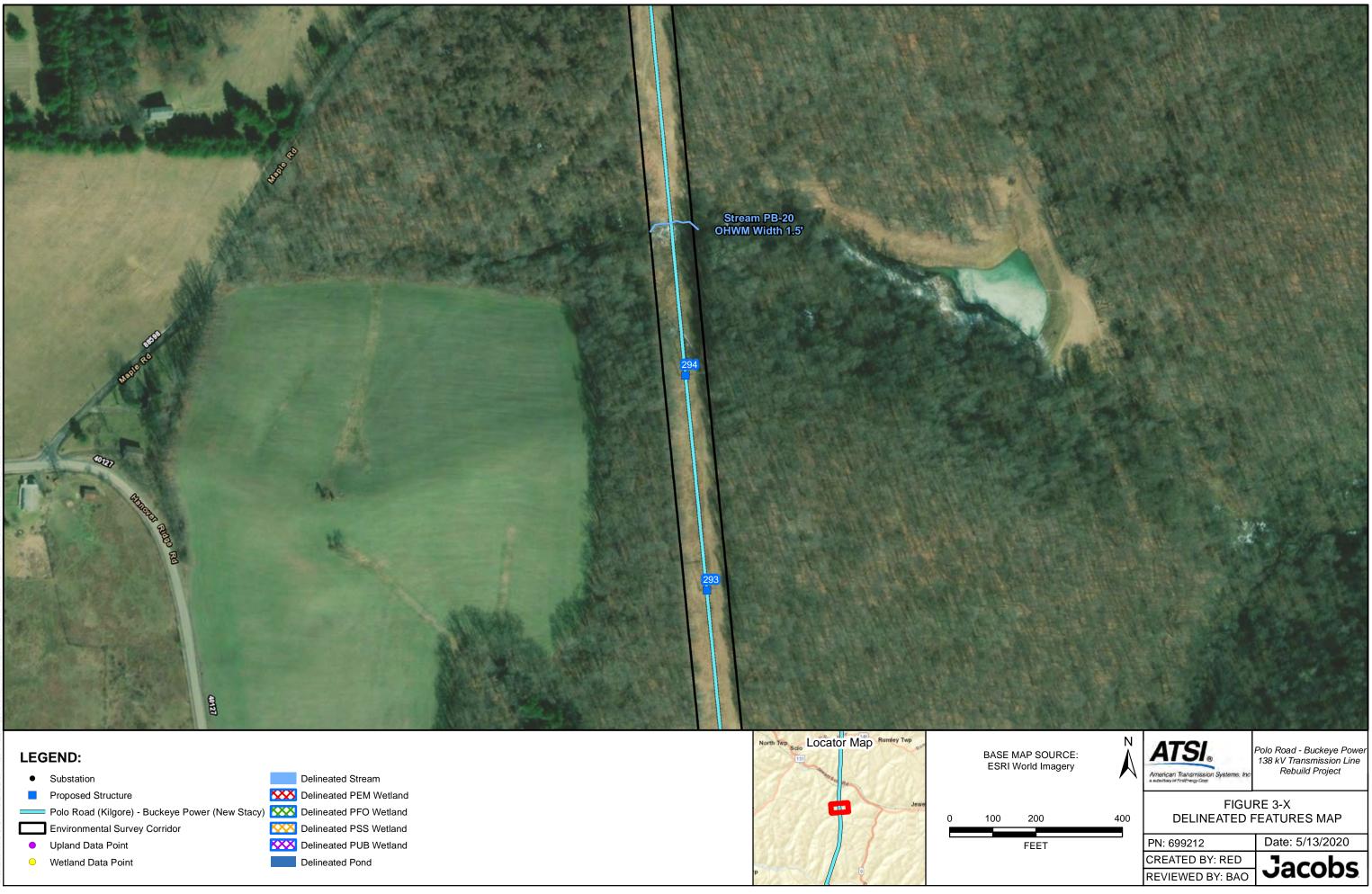


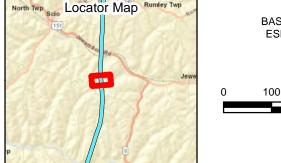


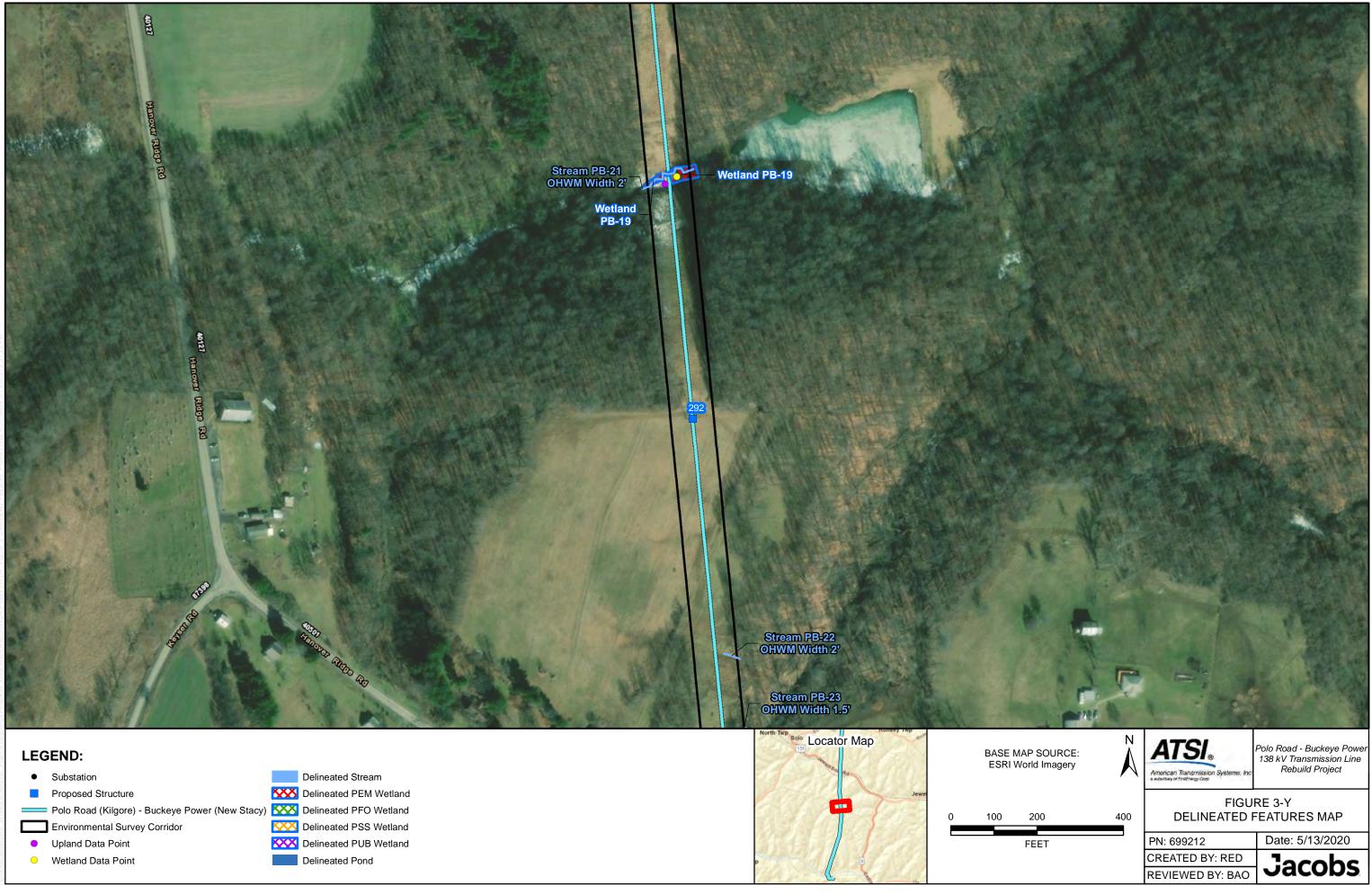


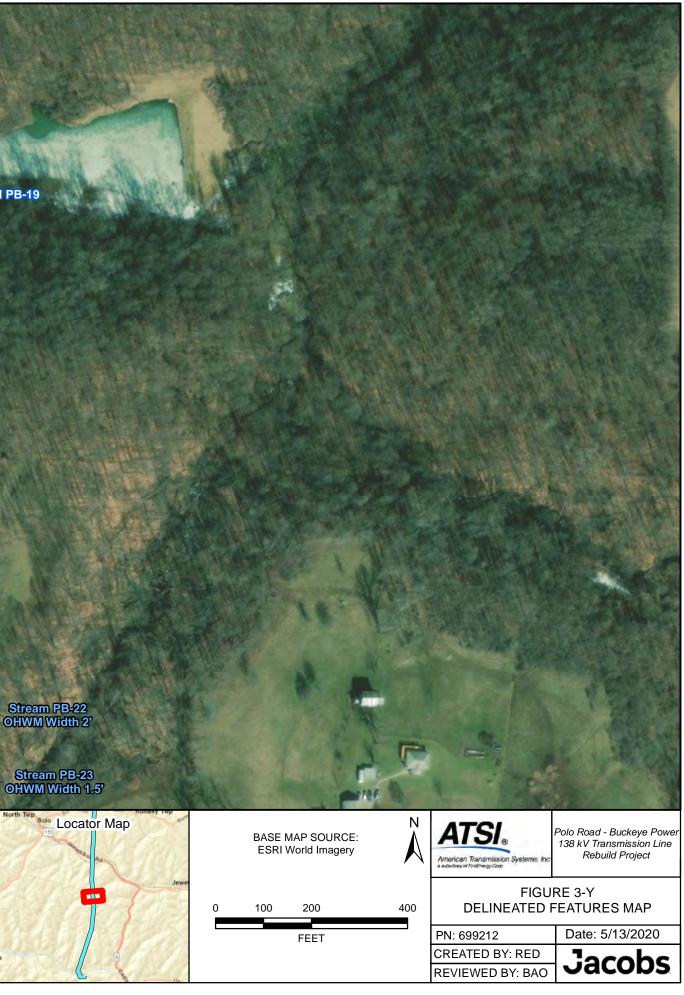


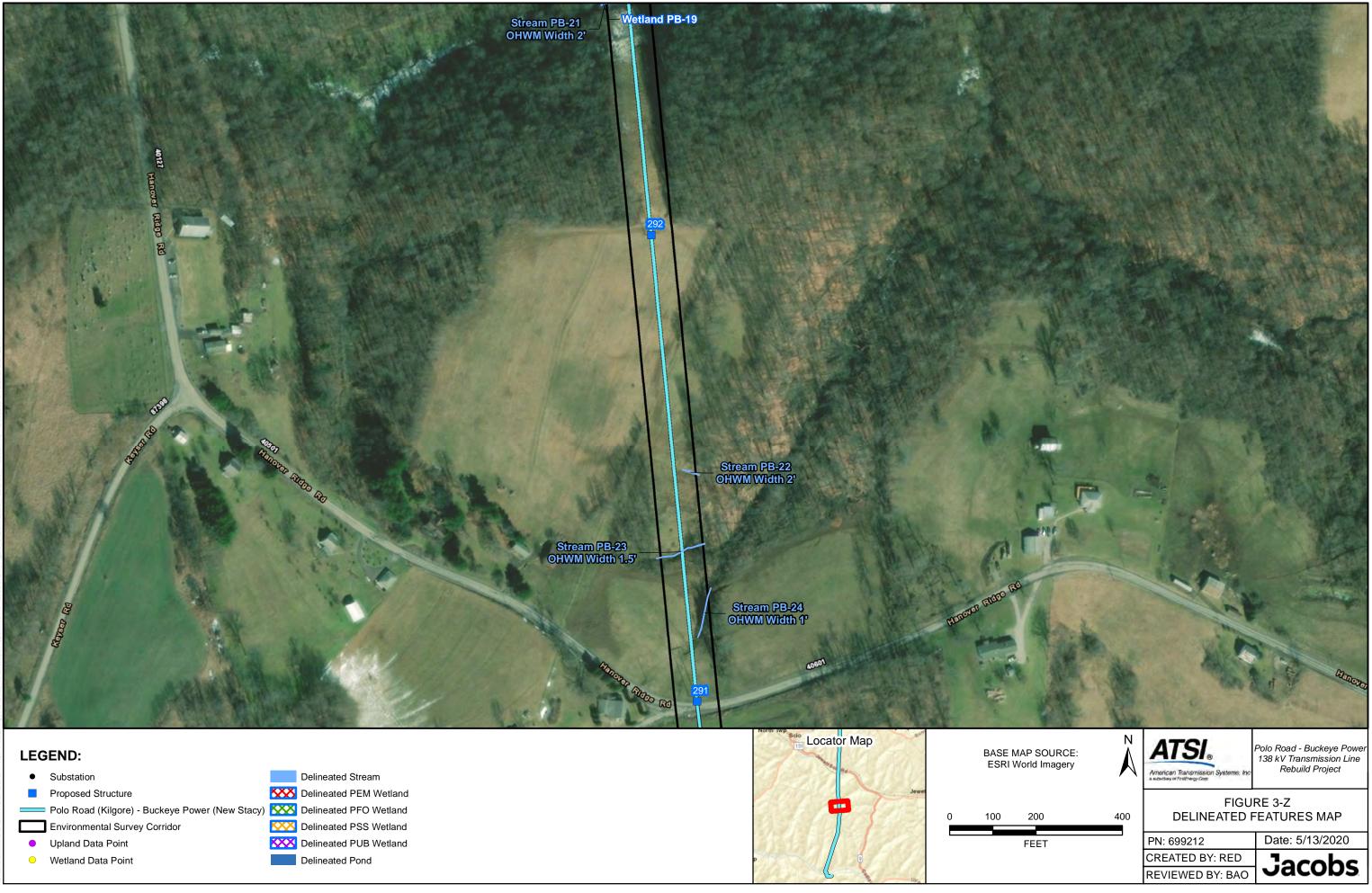


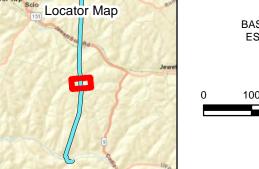


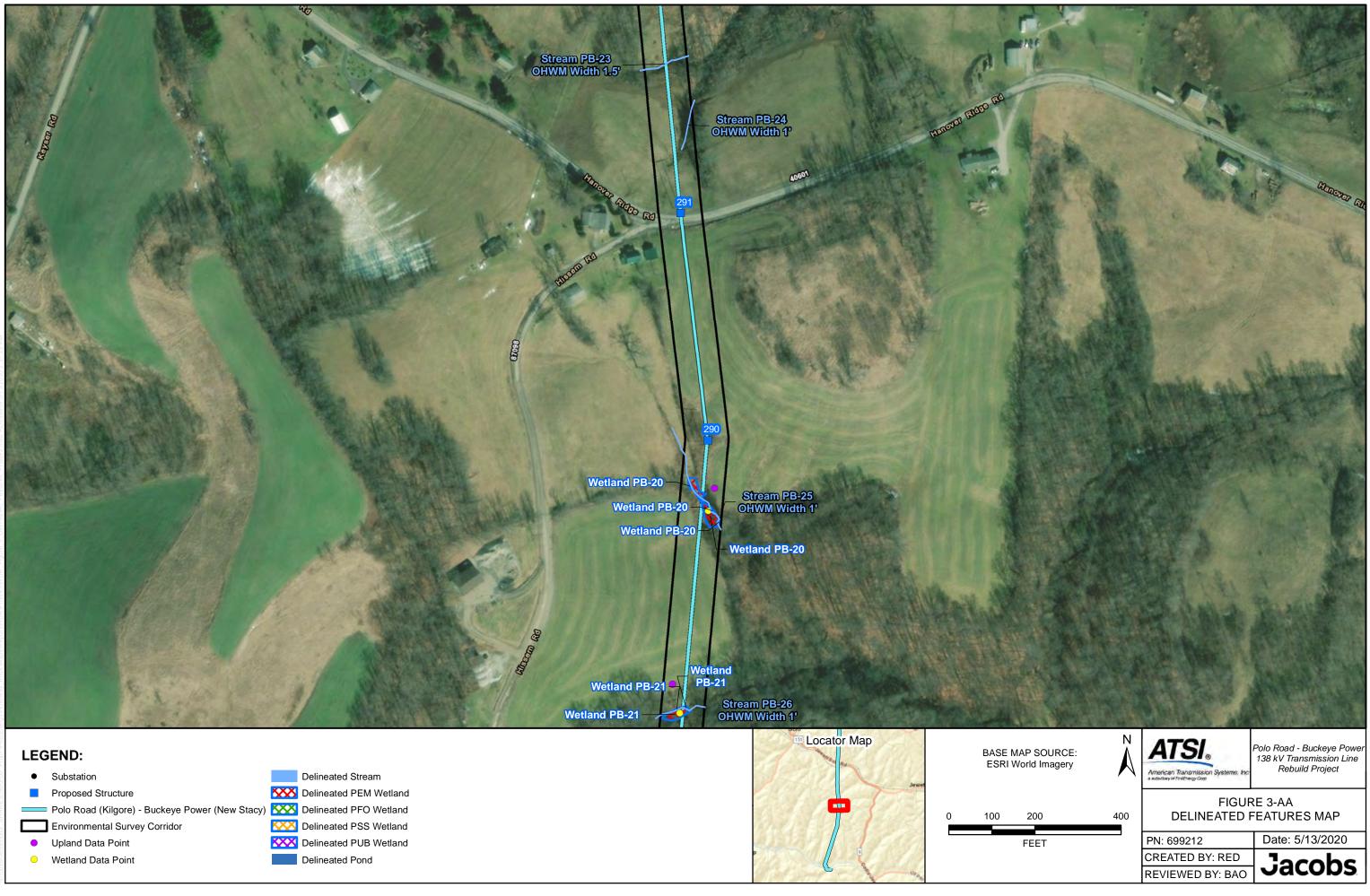




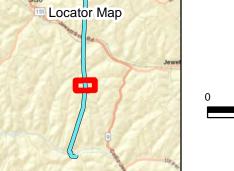


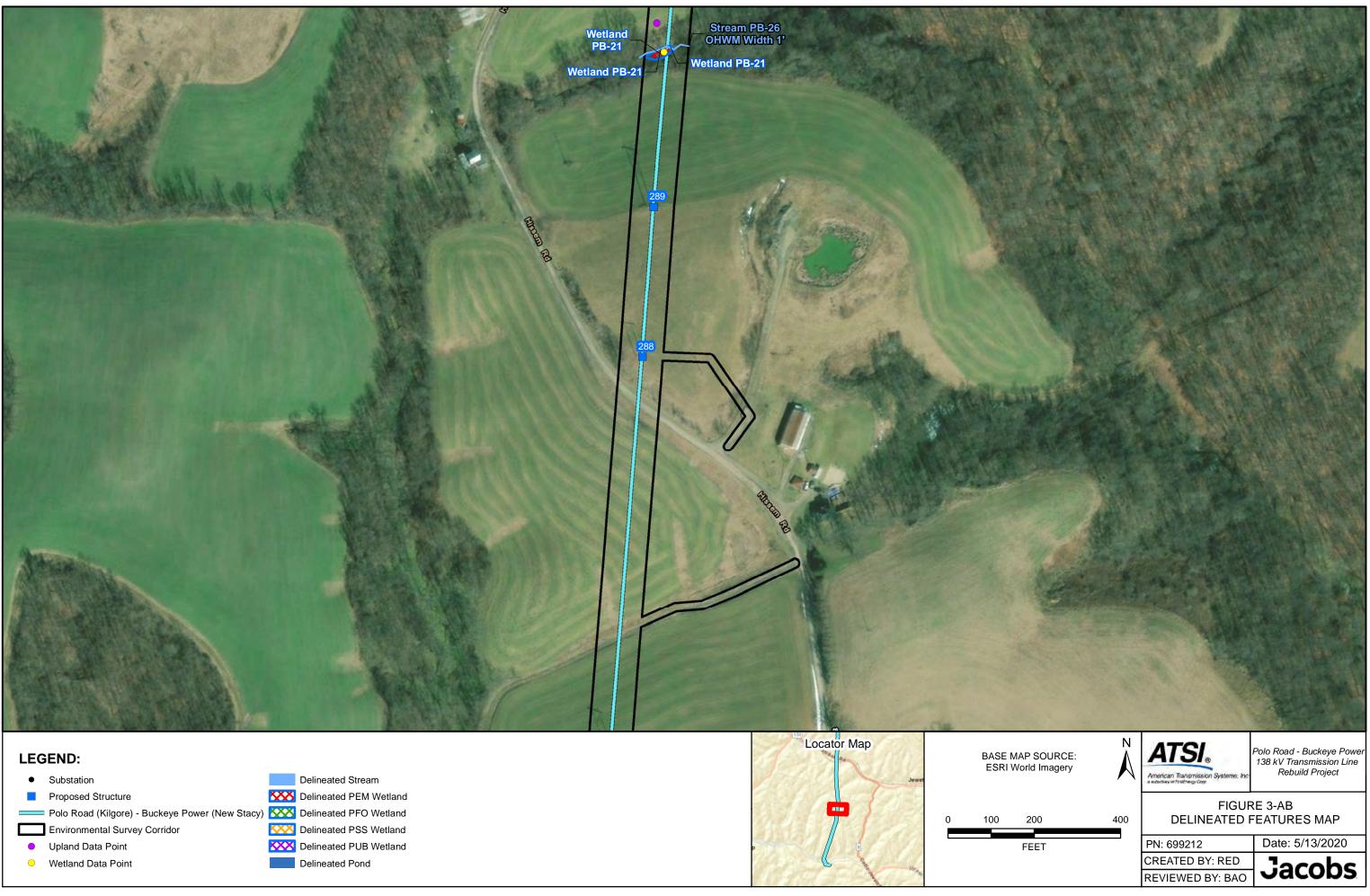


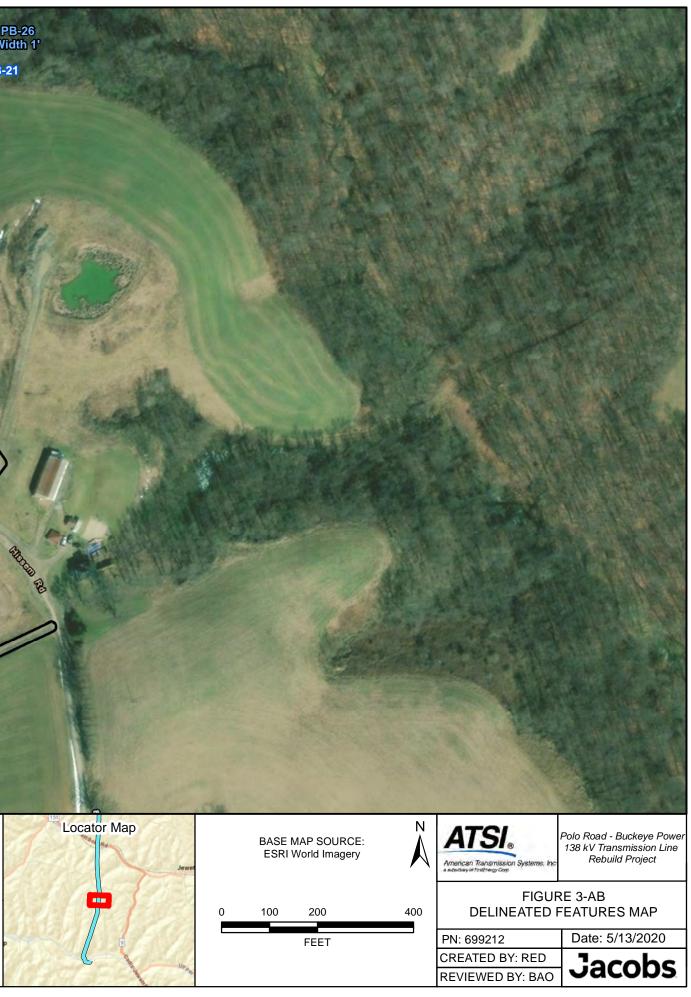




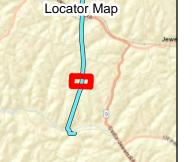


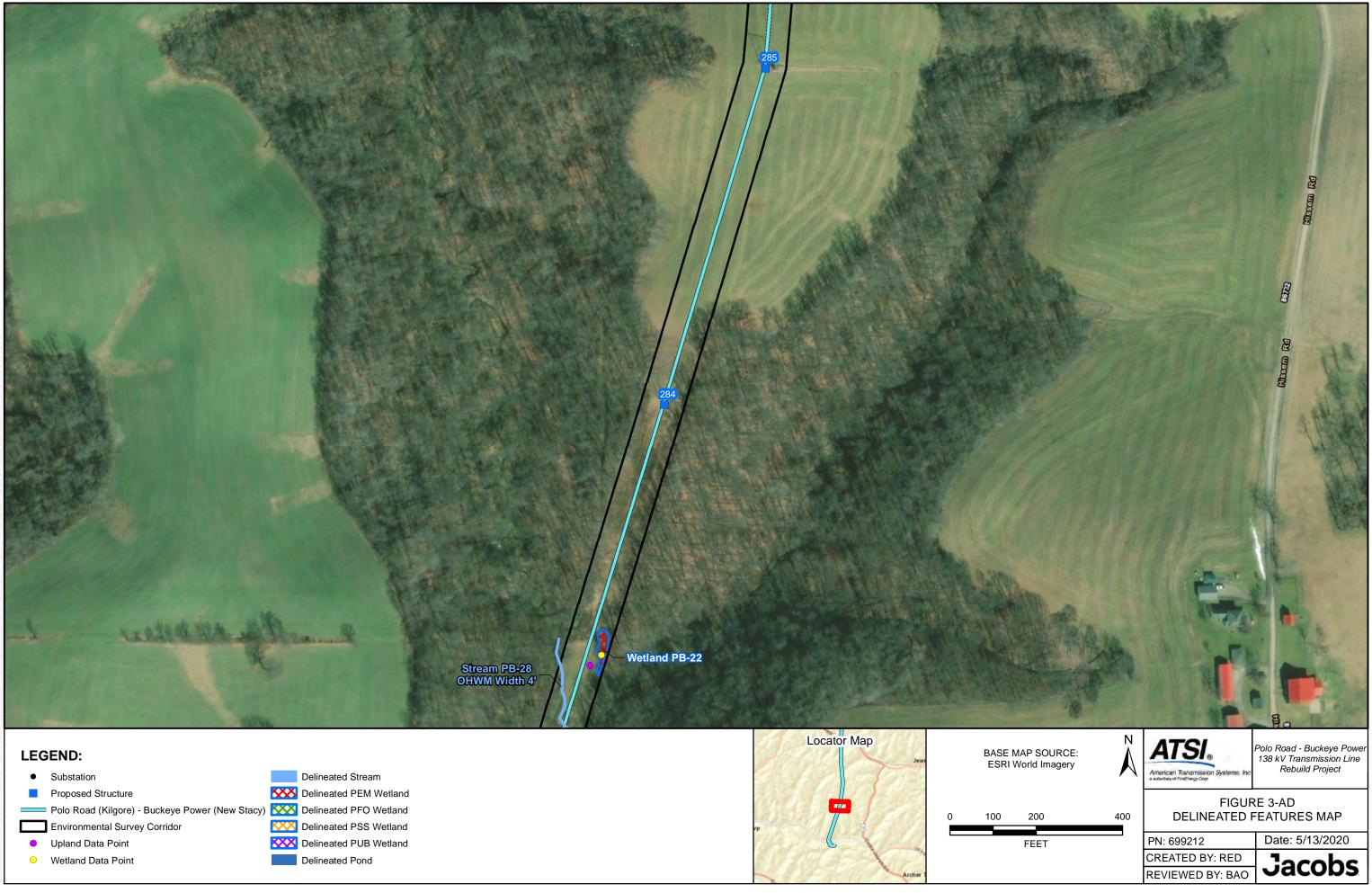




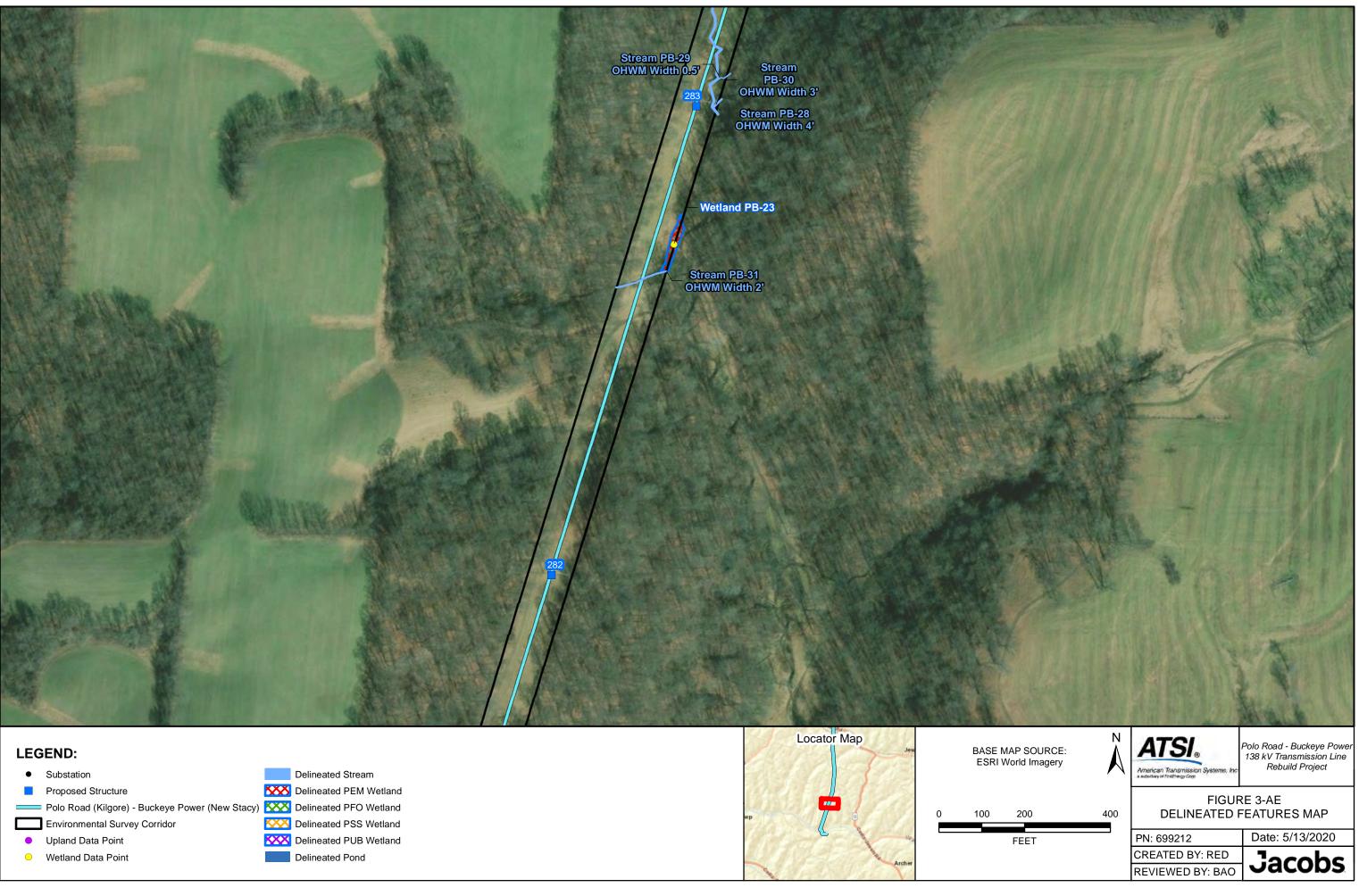




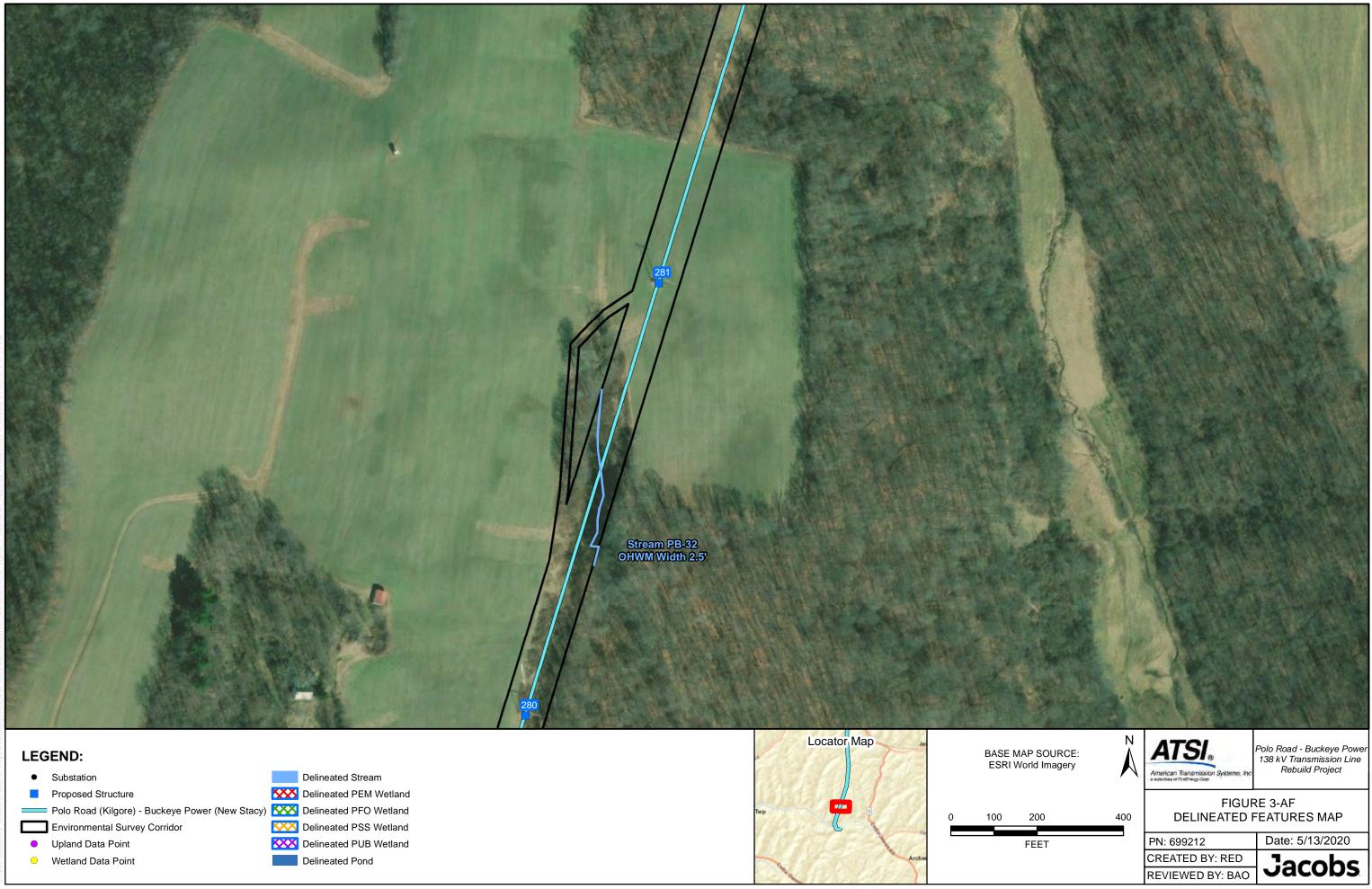






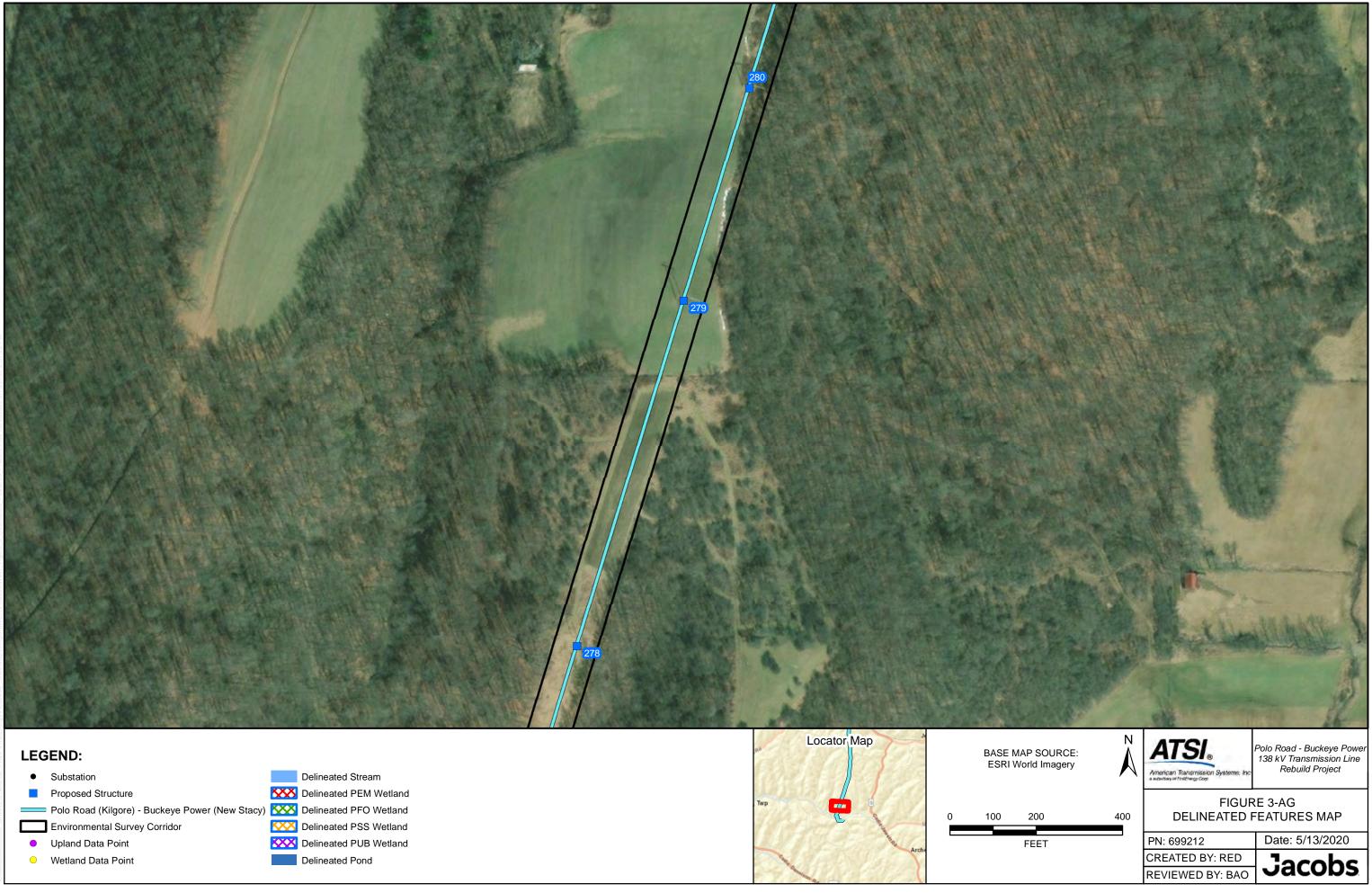






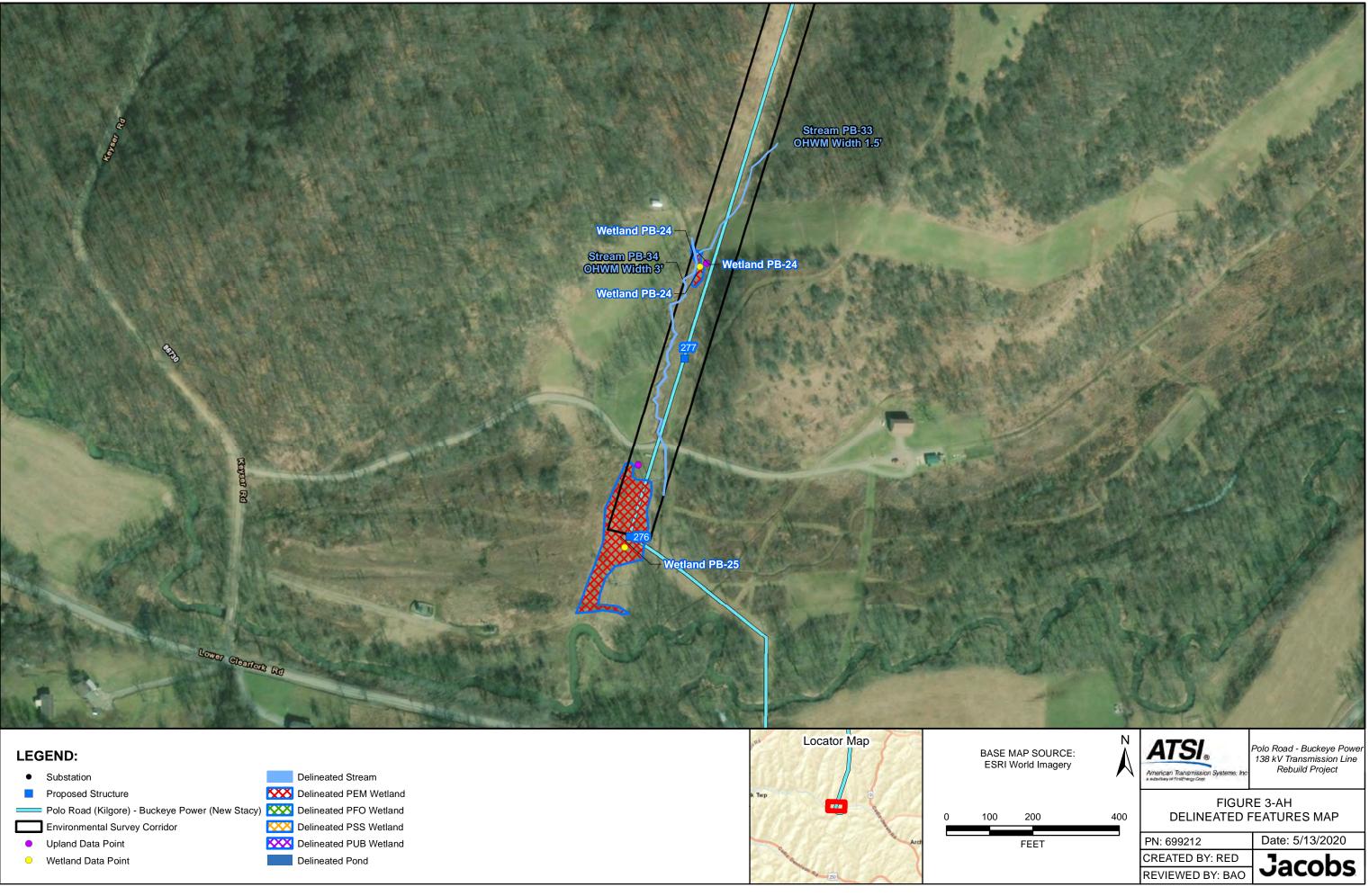


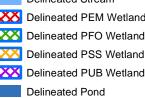


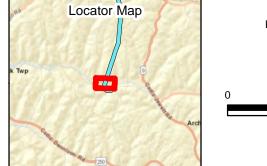












Appendix A USACE Wetland Determination Field Datasheets

		<b>o</b> "		pland PB-01
Project/Site: Holloway-Knox 138 kV Tra		-	Sampling Date 5	
Applicant/Owner: FirstEnergy	Stat		ge S 23 T 12N R 5W	-tmq-05242018-04
Investigator(s) <u>T</u> Qualio, J.Frer, Jacobs Landform (hillslope, terrace, etc.) plain		concave, convex, no		Slope (%): 3
Subregion (LRR or MLRA): LRR N	Lat.: 40.4510397		-81.049 <u>48464</u>	Datum: WGS 84
Soil Map Unit Name WmD - Westmoreland				
Are climatic/hydrologic conditions of the site	e typical for this time of the yea	Yes X	No (If no, exp	olain in remarks
Are vegetatior , soil , o	or hydrology significa	ntly disturbed?	Are "normal circumsta	ances" Yes
Are vegetatior, soil, o	or hydrology naturally	problematic	present?	
			(If needed, explain an	y answers in remarks
SUMMARY OF FINDINGS				
Hydrophytic vegetation present Yes				
Hydric soil present? No	Is the s	ampled area within	a wetland? No	
Wetland hydrology present? No	_			
Remarks:				
UPLAND area near wetland PB-01	in routinely maintained R	DW.		
HYDROLOGY				
Wetland Hydrology Indicators:		Seconda	ary Indicators (minimu	m of two required)
Primary Indicators (minimum of one is requ	ired; check all that apply)	Surf	ace Soil Cracks (B6)	
Surface Water (A1)	True Aquatic Plants (B14)	Spar	rsely Vegetated Concav	ve Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C	1) Drai	nage Patterns (B10)	
Saturation (A3)	Oxidized Rhizospheres or	Living Mos	s Trim Lines (B16)	
Water Marks (B1)	Roots (C3)		Season Water Table (C	22)
Sediment Deposits (B2)	Presence of Reduced Iron		/fish Burrows (C8)	
Drift Deposits (B3)	Recent Iron Reduction in		ration Visible on Aerial	
Algal Mat or Crust (B4)	Soils (C6)		ted or Stressed Plants	(D1)
Iron Deposits (B5)	Thin Muck Surface (C7)		morphic Position (D2)	
Inundation Visible on Aerial	Other (Explain in Remark	s) Shal	llow Aquitard (D3)	
Imagery (B7)			otopographic Relief (D4	4)
Water-Stained Leaves (B9)		FAC	-Neutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes	No <u>X</u> Depth (inche		Wetland	
Water table present? Yes	NoX Depth (inche		hydrology	
Saturation present? Yes	No X Depth (inche	es):	present?	N
(includes capillary fringe)				
Describe recorded data (stream gauge, mo	nitoring well, aerial photos, pre	vious inspections) if	availa	
Remarks:				

### **VEGETATION** - Use scientific names of plants

						Sampling Point: u-tmq-0: 50/20 Thresholds	
Plot Size (	30 ft.	)	Absolute %	Dominant	Indicator	20%	50%
		,	Cover	Species	Status	Tree Stratum 0	0
						Sapling/Shrub Stratum 0	0
							70
						Woody Vine Stratum 0	0
				·		Dominance Test Worksheet	
						-	(4)
							(A)
				. <u> </u>		Species Across all Strata: 2	(B)
			0 =	Total Cover		Percent of Dominant	
			Abacluta 9/	Dominant	Indicator	Species that are OBL,	0/ / / 🗖
Plot Size (	15 ft.	)	Cover	Species	Status	FACW, of FAC: <u>100.00</u>	<u>%</u> (A/B
						Prevalence Index Worksheet	
						Total % Cover of:	
						OBL species <u>0</u> x 1 = <u>0</u>	
							05 (B)
						Prevalence Index = $B/A = 3.61$	
			0 =	Total Cover			
			Absolute %	Dominant	Indicator		
Plot Size (	5 ft.	)					
ardii				Y			
							ido
							i a sepa
						,	on*
ensis			15	N	FACU		on
							ogy must
				·		present, unless disturbed or problematic	
						Definitions of Vegetation Strata:	
						Tree - Woody plants 3 in. (7.6 cm) or more at breast beight (DBH) regardless of beight	
						Sapling/shrub - Woody plants less than 3 i	
						greater than 3.28 ft (1 m) tall.	
			140 =	Total Cover		Herb - All herbaceous (non-woody) plants,	•
DI / CI	00.5		Absolute %	Dominant	Indicator	size, and woody plants less than 3.28 ft tall.	
Plot Size (	30 ft.	)	Cover	Species	Status	Woody vines - All woody vines greater that	n 3.28 ft ir
		<u> </u>		•		height.	
						Hvdrophytic	
						Hydrophytic vegetation	
	Plot Size (	Plot Size ( 15 ft. Plot Size ( 5 ft. Plot Size ( 5 ft. ardii rria	Plot Size ( 15 ft. )	Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system         Image: Constraint of the system       Image: Constraint of the system	Image: constraint of the system of the s	Image: status statu	Herb Stratum     28       Woody Vine Stratum     0       Dominance Test Worksheet     Number of Dominant       Species shat are OBL,     FACW, or FAC:     2       Total Number of Dominant     Species shat are OBL,       Plot Size (15 ft.)     Absolute %     Dominant       Image: Species     Status     Percent of Dominant       Species     Status     Percent of Dominant       Image: Species     Status     Prevalence Index Worksheet       Image: Species     Total % Cover of:     0       Image: Species     Status     Prevalence Index Worksheet       Image: Species     Status     Prevalence Index Worksheet       Image: Species     Status     Prevalence Index Worksheet       Image: Species     Status     Prevalence Index species       Image: Species     Status     Species       Image: Species     Status     Species       Image: Species     Status     Species       Image: S

## SOIL

	1 1					Indicator	or confirm the absend	e or indicators.)				
Depth (Inches)	Matrix Color (moist)	%	Rec Color (moist)	lox Fea <sup>:</sup> %	tures Type*	Loc**	Texture	Remarks				
0-12	10 YR 4/3	100		70		200	loam					
								-				
*Type: C=C	oncentration, D	=Depleti	on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains					
**Location:	PL=Pore Lining,	M=Mat	rix									
Hydric Soil	Indicators:		Dark Su				Indicators fo	r Problematic Hydric Soils:				
Histisol (A1)Polyvalue Below Surface (S8)2 cm Muck (A10) (MLRA 147)Histic Epipedon (A2)(MLRA 147, 148)Coast Prairie Redox (A16)(MLRA 147,Black Histic (A3)Thin Dark Surface (S9)Piedmont Floodplain Soils (F19Hydrogen Sulfide (A4)(MLRA 147, 148)(MLRA 136, 147)Stratified Layers (A5)Loamy Gleyed Matrix (F2Very Shallow Dark Surface (TF12)2 cm Muck (A10) (LRR N)Depleted Matrix (F3)Other (Explain in Remarks)Depleted Below Dark Surface (A11)Redox Dark Surface (F6)Other (Explain in Remarks)Thick Dark Surface (A12)Depleted Dark Surface (F7)Sandy Mucky Mineral (S1)Redox Depressions (F8)(LRR N, MLRA 147, 148)Iron-Manganese Masses (F12) LRR N, MLRA 136)Umbric Surface (F13) (MLRA 136, 122)Sandy Redox (S5)Piedmont Floodplain Soils (F19) MLRA 148)Stripped Matrix (S6)Red Parent Material (F21)(MLRA 127, 147)*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problem								Floodplain Soils (F19 <b>36, 147)</b> Ilow Dark Surface (TF12) Iplain in Remarks				
Restrictive I Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil pres	sent? <u>N</u>				
Remarks:						-						

	State: Section Local relief (co Lat.: 40.44841588 0 to 3 percent slopes, occasionall e typical for this time of the yea or hydrology	n, Township, Range <u>S 23 T 12N R 5W</u> ncave, convex, none) <u>convex</u> Slope (%): <u>3</u> Long.: <u>-</u> 81.04951574 Datum: WGS 84
Hydrophytic vegetation present'       No         Hydric soil present?       No         Wetland hydrology present?       No	Is the sam	npled area within a wetland? No
Remarks: UPLAND area near Wetland PB-02 HYDROLOGY	2 in routinely maintained RO	W.
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
	ired, check all that apply)	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requ		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Li	iving Moss Trim Lines (B16)
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C	C4) Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tille	ed Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes	No X Depth (inches)	Wetland
Water table present? Yes	No X Depth (inches)	
Saturation present? Yes	No X Depth (inches)	
(includes capillary fringe)		
Describe recorded data (stream gauge, mo	nitoring well, aerial photos, previo	bus inspections), if availa
Remarks:		

### **VEGETATION** - Use scientific names of plants

						Sampling Point: 50/20 Thresholds	
			Absolute %	Dominant	Indicator		20% 50%
Free Stratum	Plot Size (	30 ft. )	Cover	Species	Status	Tree Stratum	0 0
			00101	opeoloo	elalae	Sapling/Shrub Stratum	0 0
			·			Herb Stratum	24 60
			· <u> </u>			Woody Vine Stratum	0 0
			·				0 0
						Dominance Test Workshe	et
			·			Number of Dominant	
			·			Species that are OBL,	4 (A)
			·			FACW, or FAC:	<u> </u>
			·			Total Number of Dominant Species Across all Strata:	2 (B)
			0 =	Total Cover			(D)
						Percent of Dominant Species that are OBL,	
Sapling/Shrub			Absolute %	Dominant	Indicator	FACW, or FAC:	50.00% (A/B
Stratum	Plot Size (	15 ft. )	Cover	Species	Status		(, v2
						Prevalence Index Worksho	eet
						Total % Cover of:	
			·			OBL species 0 x 1	= 0
			·			FACW species 40 x 2	
			·			FAC species 0 x 3	
						FACU species 15 x 4	
			·			UPL species $65 \times 5$	
						Column totals 120 (A)	465 (B)
			·			Prevalence Index = $B/A =$	3.88
			· · · · · · · · · · · · · · · · · · ·				0.00
			0 =	<ul> <li>Total Cover</li> </ul>			
			Absolute %	Dominant	Indicator	Hydrophytic Vegetation In	
Herb Stratum	Plot Size (	5 ft. )	Cover	Species	Status	Rapid test for hydrophyt Dominance test is >50%	
Triticum aestivum			65	Y	UPL	Prevalence index is≤3.0	
Triticum aestivum			40	<u> </u>	FACW		
Alliaria petiolata			15		FACU	Morphological adaptatio	
Allialla peliolala			15	N	FACU	supporting data in Rema	arks or on a sepai
						sheet)	
						Problematic hydrophytic	vegetation*
						(explain)	
						*Indicators of hydric soil and wetle	
			·			present, unless disturbed or prob	lematic
						Definitions of Vegetation S	Strata:
			·			Tree - Woody plants 3 in. (7.6 cm	
						at breast height (DBH), regardles	
						Sapling/shrub - Woody plants le	ess than 3 in. DBH a
			·	<u> </u>	<u> </u>	greater than 3.28 ft (1 m) tall.	
			120 =	Total Cover		Herb - All herbaceous (non-wood	lv) plants regardless
				Denti	la alta d	size, and woody plants less than	, 0
Woody Vine	Plot Size (	30 ft. )	Absolute %	Dominant	Indicator		
Stratum			Cover	Species	Status	Woody vines - All woody vines g	reater than 3.28 ft ir
			· <u> </u>	<u> </u>		height.	
						Hydrophytic	
						vegetation	
			0 =	Total Cover		present? N	_
marker (Include shat-	numbere b	o or on o con	ata shaat				
marks: (Include photo	numbers her	e or on a separ	ate sneet				

### SOIL

Depth		lox Fea			Texture	Remarks		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Toxidio	
0-12	10 YR 5/4	100					loam	
				d Matrix	, CS=Co	vered or	Coated Sand Grai	ns
	PL=Pore Lining,	M=Matr	ix					
ydric Soi	I Indicators:		Dark Su				Indicators	s for Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy Sandy Sandy Strippe	ipipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark Su park Surface (A12 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface (A 2) S1) <b>8)</b> S4	Thin Da (MLRA Loamy Deplete Redox I Redox I Iron-Ma Umbric Piedmo Red Pa	147, 14 Gleyed dd Matrix Dark Su dd Dark Depress Inganes Surface nt Flooc rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) Irface (F6) Surface sions (F8 e Masse e (F13) ( <b>N</b> dplain Sc terial (F2)	5) (F7 <u>)</u> s (F12)   <b>/ILRA 13</b> vils (F19) 21) <b>(MLR</b> /	Piedm (MLR/ Very S Other	, ,
estrictive ype: epth (inch	Layer (if observe es):	ed)			-		Hydric soil p	present? <u>N</u>
						1		
emarks:								
emarks:								
emarks:								
emarks:								
emarks:								

Project/Site: Holloway-Knox 138 kV Trans		Carroll Report Name Upland PB-03,04 Sampling Date 6/6/2018
Applicant/Owner: FirstEnergy	State:	
Investigator(s) <u>M. Thomayer, T.Qualio; Jaco</u> Landform (hillslope, terrace, etc.) hillslope		Second state         Second state<
Subregion (LRR or MLRA): LRR N	Lat.: 40.44613297	Long.: -81.04968555 Datum: NAD 83
Soil Map Unit Name CpD - Coshocton silt loa		NWI Classification: N/A
Are climatic/hydrologic conditions of the site t	ypical for this time of the yea	Yes X No (If no, explain in remarks
Are vegetation , soil , or	hydrology significantly	disturbed? Are "normal circumstances" Yes
Are vegetation , soil , or	hydrology naturally pro	blematic present?
		(If needed, explain any answers in remarks
SUMMARY OF FINDINGS		
Hydrophytic vegetation present No		
Hydric soil present? No	Is the samp	led area within a wetland? No
Wetland hydrology present? No		
Remarks:		
Upland adjacent to Wetlands PB-03	and PB-04 and within maint	ained ROW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is require		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Livi	ingMoss Trim Lines (B16)
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4	
Drift Deposits (B3)	Recent Iron Reduction in Tilled	
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes	No X Depth (inches):	Wetland
Water table present? Yes	No X Depth (inches):	hydrology
Saturation present? Yes	No X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, monit	oring well, aerial photos, previou	s inspections), if availa
Demortro		
Remarks:		

### **VEGETATION** - Use scientific names of plants

						Sampling Point:	Upl-mdt-6/6/2018-03
						50/20 Thresholds	
				Development	la d'anten		
Tree Stratum	Plot Size (	30 ft. )	Absolute %	Dominant	Indicator		20% 50%
		, oo na	Cover	Species	Status	Tree Stratum	0 0
1						Sapling/Shrub Stratum	0 0
2				·		Herb Stratum	20 50
3						Woody Vine Stratum	0 0
						woody vine Stratum	0 0
4							
5						Dominance Test Workshe	et
6						Number of Dominant	
7						Species that are OBL,	
8						FACW, or FAC:	1 (A)
9						Total Number of Dominant	( )
10						Species Across all Strata:	(B)
			0 =	<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
						Species that are OBL,	
0 1: /01 1				р · ,			
Sapling/Shrub	Plot Size (	15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	(A/B)
Stratum			Cover	Species	Status		
1						Prevalence Index Worksh	oot
							661
2						Total % Cover of:	
3						OBL species 0 x 1	l = 0
4						FACW species 0 x 2	
5						FAC species 30 x 3	
						FACU species 70 x 4	
6							
7						UPL species 0 x 5	
8						Column totals 100 (A)	) <u>370</u> (B)
9						Prevalence Index = B/A =	3.70
10				·			
				Total Cover			
						I hadron hadle Menetedian h	
						Hydrophytic Vegetation In	idicators:
Herb Stratum	Plot Size (	5 ft. )	Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
Held Stratum	PIOL SIZE (	5 ft. )	Cover	Species	Status	Dominance test is >50%	
1 Poa pratensis			70	v	FACU	Prevalence index is≤3.	
				<u> </u>			
2 Solidago sp.			20	Y	FAC	Morphological adaptation	
3 Rubus pensilva	anicus		10	N	FAC	supporting data in Rem	arks or on a separate
4						sheet)	
5						Problematic hydrophyti	c vegetation*
6						(explain)	3
7							
·						*Indicators of hydric soil and wet	
8						present, unless disturbed or prot	olematic
9							
10						Definitions of Vegetation	Strata:
11						-	
				·		Tree - Woody plants 3 in. (7.6 cr	
12						at breast height (DBH), regardles	ss of height.
13						Sapling/shrub - Woody plants I	less than 3 in DPU and
14							Coo man o m. Don allu
15						greater than 3.28 ft (1 m) tall.	
			100 =	Total Cover			
						Herb - All herbaceous (non-woo	
				Denti	la dia di	size, and woody plants less than	3.28 ft tall.
Woody Vine	Plot Size (	30 ft. )	Absolute %	Dominant	Indicator		
Stratum	1 101 0120 (	, oo n.	Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft in
1						height.	
2							
3							
4						Hydrophytic	
5						vegetation	
°				<b>T</b> ( ) O		•	
			=	<ul> <li>Total Cover</li> </ul>		present? N	_
Demonstrative (In alcosta in b							
Remarks: (Include ph	oto numbers her	re or on a sep	arate sheet				
Solidago sp. cons	ervatively ass	igned FAC i	indicator status	, hydrophytic	vegetation i	indicator not met.	
	•	-		· · ·	-		

## SOIL

Depth	Matrix			dox Fea			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	<b></b>	
0-10	10YR 4/3	100					Silt loam	
					-			
					-			
					-			
					-			-
Type: C=C	Concentration D	-Depleti	n RM-Reduce	d Matrix	CS=Co	vered or	Coated Sand Grains	
•••	PL=Pore Lining,	•			., 00-00		Could Cana Chains	
	I Indicators:						Indicators for	Problematic Hydric Soils:
,			Dark St	urface (S	S7)			· · · · · · · · · · · · · · · · · · ·
Histisol	(A1)		Polyval	ue Belò	w Surfac	e (S8)	2 cm Muc	k (A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14				irie Redox (A16) <b>(MLRA 147, 14</b>
	listic (A3)				ace (S9)			Floodplain Soils (F19
	en Sulfide (A4)			147, 14		-0	(MLRA 13	
	ed Layers (A5)	NI\	Loamy Deplete		Matrix (F	-2		ow Dark Surface (TF12)
	uck (A10) (LRR ed Below Dark S				rface (F6	6)		
	ark Surface (A1				Surface			
	Mucky Mineral (	,			sions (F8	. ,		
,	I, MLRA 147, 14	,			· ·	,	LRR N, MLRA 136)	
	, Gleyed Matrix (S				e (F13) (N			
	Redox (S5)		Piedmo	nt Flood	dplain Sc	oils (F19)	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
ndicators	of hydrophytic ve	egetation	and wetland hy	drology	must be	present	, unless disturbed or pr	oblem
estrictive	Layer (if observe	ed)						
ype:		,					Hydric soil prese	ent? N
epth (inch	es):				_			
lemarks:								

					Upland PB-05	
Project/Site: Holloway-Knox 138 kV T	ransmission Line City/C	-	Carroll	Sampling Date		
Applicant/Owner: FirstEnergy			Ohio	Sampling Point:	Upl-mdt-6/6/2018-02	
Investigator(s) M. Thomayer, T.Qualio;				ge <u>S 23 T 12N R 5</u> V		
Landform (hillslope, terrace, etc.) hillsl Subregion (LRR or MLRA): LRR N		315037	cave, convex, no	one) <u>convex</u> -81.04985794	Slope (%): <u>1</u> Datum: NAD 83	
Soil Map Unit Name CpD - Coshocton silt				Classification: <u>N/A</u>	Datum: NAD 65	
Are climatic/hydrologic conditions of the si	te typical for this time of th	he yea	Yes X	No (If no, ex	plain in remarks	
Are vegetation , soil ,	or hydrology sig	ignificantly (	disturbed?	Are "normal circumst	tances" Yes	
		aturally pro		present?		
° <u> </u>				(If needed, explain a	ny answers in remarks	
SUMMARY OF FINDINGS						
Hydrophytic vegetation present' No	)					
Hydric soil present? No	) Is	s the samp	led area within	a wetland? No	0	
Wetland hydrology present? No	)					
Remarks:						
itemarks.						
Upland adjacent to Wetland PB-0	5 and within maintaine	ed ROW.				
HYDROLOGY			Q			
Wetland Hydrology Indicators:		<b>`</b>		ary Indicators (minim	um of two required)	
Primary Indicators (minimum of one is req				ace Soil Cracks (B6)		
Surface Water (A1)	True Aquatic Plants	s (B14)	Spar	Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)	Hydrogen Sulfide C	Odor (C1)	Drair	nage Patterns (B10)		
Saturation (A3)	Oxidized Rhizosphe	eres on Livi	ing Mos	s Trim Lines (B16)		
Water Marks (B1)	Roots (C3)		Dry-	Season Water Table (	(C2)	
Sediment Deposits (B2)	Presence of Reduc	ced Iron (C4	) Cray	fish Burrows (C8)		
Drift Deposits (B3)	Recent Iron Reduct	tion in Tilled		ration Visible on Aeria		
Algal Mat or Crust (B4)	Soils (C6)		Stun	ted or Stressed Plants	s (D1)	
Iron Deposits (B5)	Thin Muck Surface	(C7)	Geo	morphic Position (D2)		
Inundation Visible on Aerial	Other (Explain in R	Remarks)	Shal	low Aquitard (D3)		
Imagery (B7)			Micro	otopographic Relief (D	04)	
Water-Stained Leaves (B9)			FAC	-Neutral Test (D5)		
Aquatic Fauna (B13)						
Field Observations:						
Surface water present? Yes	No X Depth	n (inches):		Wetland		
Water table present? Yes	No X Depth	n (inches):		hydrology		
Saturation present? Yes	No X Depth	n (inches):		present?	Ν	
(includes capillary fringe)						
Describe recorded data (atreem asures m	onitoring wall parial shat	oe proview	e inepoctione) if	availa		
Describe recorded data (stream gauge, m	onitoring well, aerial photo	us, previous	s inspections), if	avalla		
Remarks:						

							50/20 Thresholds	
<b>-</b> 0, ,		00.0	,	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0 0
					·		Sapling/Shrub Stratum	0 0
							Herb Stratum	20 50
							Woody Vine Stratum	0 0
							Dominance Test Workshe	<b>a</b> 4
							Number of Dominant	et
							Species that are OBL,	
							FACW, or FAC:	3 (A)
							Total Number of Dominant	
				0 =	Total Cover		Species Across all Strata:	<u> </u>
							Percent of Dominant Species that are OBL,	
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	<u>100.00%</u> (A/B
							Prevalence Index Worksho	eet
							Total % Cover of:	
							OBL species 0 x 1	
							FACW species 0 x 2	
							FAC species 80 x 3	
							FACU species 20 x 4	
							UPL species 0 x 5	
							Column totals 100 (A)	
					. <u> </u>		Prevalence Index = B/A =	3.20
				0 =	Total Cover		Hydrophytic Vegetation In	dicators:
Herb Stratum	Plot Size (	5 ft.	`	Absolute %	Dominant	Indicator	Rapid test for hydrophyt	
	1101 3126 (	5 π.	)	Cover	Species	Status	X Dominance test is >50%	, <b>-</b>
Solidago sp.				30	Y	FAC	Prevalence index is≤3.0	
Rubus pensilva				30	Y	FAC	Morphological adaptation	
Verbesina alter				20	Y	FAC	supporting data in Rema	arks or on a sepa
Podophyllum pe	eltatum			10	N	FACU	sheet)	
Rosa multiflora				10	N	FACU	Problematic hydrophytic	vegetation*
							(explain)	
			_				*Indicators of hydric soil and wetl present, unless disturbed or prob	
					. <u> </u>		Definitions of Vegetation S	Strata:
							Tree - Woody plants 3 in. (7.6 cm	
							at breast height (DBH), regardles	
						·	Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	ess than 3 in. DBH ar
				100 =	Total Cover		Herb - All herbaceous (non-wood	ly) plants, regardless
Moody Mine				Abcolute 0/	Dominant	Indicator	size, and woody plants less than	
Woody Vine Stratum	Plot Size (	30 ft.	)	Absolute % Cover	Dominant Species	Status	Woody vines - All woody vines of height.	greater than 3.28 ft ir
							Hydrophytic	
							vegetation	
				=	Total Cover		present? Y	-
	oto numbers he	re or on a s	epara	ite sheet				
narks: (Include pho								
narks: (Include pho			<u> </u>	liante t - t				
narks: (Include pho idago sp. conse	ervatively ass	igned FA	C inc	licator status				
	ervatively ass	igned FA	C inc	licator status				

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Depth	Matrix			lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Kemarks
0-10	10YR 4/2	100					Silt loam	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
*Location:	PL=Pore Lining,	M=Mati	ix					
lydric Soi	I Indicators:		Dark Su				Indicators for I	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	ipipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark Si bark Surface (A1) Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface (# 2) S1) <b>8)</b> S4	(MLRA Loamy G Deplete Redox I Redox I Iron-Ma Umbric Piedmo Red Pa	rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface e Masse e (F13) ( <b>N</b> dplain So terial (F2)	6) (F7 <u>)</u> s (F12) ↓ <b>/ILRA 13</b> vils (F19) 21) <b>(MLR</b> /	Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 ain in Remarks
Restrictive Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil preser	nt? <u>N</u>
Remarks:								
Remarks:								
emarks:								
emarks:								

					Upland PB-06	
Project/Site: Holloway-Knox 138 kV T	ransmission Line	City/County:	Carroll	Sampling Date		
Applicant/Owner: FirstEnergy		State:		Sampling Point:	Upl-mdt-6/6/2018-01	
Investigator(s) M. Thomayer, T. Qualio;				nge <u>S 23 T 12N R 5</u>		
Landform (hillslope, terrace, etc.) hills Subregion (LRR or MLRA): LRR N		Local reliet (col 40.44233818	ncave, convex, r	none) <u>convex</u> -81.04996387	Slope (%): <u>1</u> Datum: NAD 83	
Soil Map Unit Name CpD - Coshocton sil				VI Classification: <u>N/A</u>		
Are climatic/hydrologic conditions of the s	ite typical for this tim	ne of the yea	Yes X	_No (If no, e	xplain in remarks	
Are vegetatior , soil	, or hydrology	significantly	y disturbed?	Are "normal circums	tances" Yes	
	, or hydrology	naturally pr		present?		
				(If needed, explain a	any answers in remarks	
SUMMARY OF FINDINGS						
Hydrophytic vegetation present Ye						
Hydric soil present? N	0	Is the sam	pled area withi	n a wetland? N	0	
Wetland hydrology present? N	0					
Remarks:	<u>I</u>					
Upland adjacent to Wetland PB-0	6 and within mair	ntained ROW	'.			
HYDROLOGY						
Wetland Hydrology Indicators:			Secon	dary Indicators (minim	num of two required)	
Primary Indicators (minimum of one is rec	uired; check all that	apply)		rface Soil Cracks (B6)	. ,	
Surface Water (A1)		Plants (B14)		arsely Vegetated Conc	ave Surface (B8)	
High Water Table (A2)		Ifide Odor (C1)		ainage Patterns (B10)		
Saturation (A3)			<u> </u>	oss Trim Lines (B16)		
Water Marks (B1)	Roots (C3)	zospheres on Li	• · · · · · · · · · · · · · · · · · · ·	-Season Water Table	(C2)	
Sediment Deposits (B2)		Reduced Iron (C		ayfish Burrows (C8)	(02)	
Drift Deposits (B3)		Reduction in Tille	,	Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Soils (C6)			Stunted or Stressed Plants (D1)		
Iron Deposits (B5)	Thin Muck S	urface (C7)			omorphic Position (D2)	
Inundation Visible on Aerial		in in Remarks)		allow Aquitard (D3)		
Imagery (B7)				crotopographic Relief (I	14)	
Water-Stained Leaves (B9)				C-Neutral Test (D5)	5.)	
Aquatic Fauna (B13)						
Field Observations:						
Surface water present? Yes	No X	Depth (inches):	:	Wetland		
Water table present? Yes		Depth (inches):		hydrology		
Saturation present? Yes		Depth (inches):		present?	Ν	
(includes capillary fringe)		,				
	en de sie en anti-	Labora i				
Describe recorded data (stream gauge, m	ionitoring well, aeria	i pnotos, previo	ous inspections),	it avalla		
Remarks:						

		anioo or plai				Sampling Point:	Upl-mdt-6/6/2018-01
						50/20 Thresholds	
			Absolute %	Dominant	Indicator		000/ 500/
Tree Stratum	Plot Size (	30 ft. )					20% 50%
		,	Cover	Species	Status	Tree Stratum	0 0
1						Sapling/Shrub Stratum	0 0
2						Herb Stratum	20 50
3						Woody Vine Stratum	0 0
-			·			woody vine Stratum	0 0
4							
5						Dominance Test Workshe	et
6						Number of Dominant	
7						Species that are OBL,	
8						FACW, or FAC:	2 (A)
			·				(()
9						Total Number of Dominant	
10						Species Across all Strata:	2 (B)
			0 =	Total Cover		Demonst of Deminent	
						Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub	Dist Cine (	454	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	Plot Size (	15 ft. )	Cover	Species	Status		、 、
1						Prevalence Index Worksh	eet
2						Total % Cover of:	
3						OBL species 0 x 1	= 0
				·		· · ·	
4				·			
5						FAC species 100 x 3	
6						FACU species 0 x 4	= 0
7						UPL species 0 x 5	$\dot{b} = 0$
8						Column totals 100 (A)	
9						Prevalence Index = B/A =	3.00
10							
			0 =	<ul> <li>Total Cover</li> </ul>			
						Hydrophytic Vegetation Ir	dicators:
			Absolute %	Dominant	Indicator		
Herb Stratum	Plot Size (	5 ft. )				Rapid test for hydrophy	
	(		Cover	Species	Status	X Dominance test is >50%	6
<ol> <li>Solidago sp.</li> </ol>			70	Y	FAC	X Prevalence index is≤3.0	)*
2 Rubus pensilv	anicus		30	Y	FAC	Morphological adaptation	ons* (provide
3	amouo			<u> </u>	1710	supporting data in Rem	
							arks of off a separate
4						sheet)	
5						Problematic hydrophytic	c vegetation*
6						(explain)	
7						*Indicators of hydric soil and wet	land hydrology must be
·							
8						present, unless disturbed or prob	nematic
9							
10						Definitions of Vegetation	Strata:
11						Tree - Woody plants 3 in. (7.6 cr	m) or more in diameter
12							
						at breast height (DBH), regardles	as or neight.
13				·		Sapling/shrub - Woody plants l	ess than 3 in. DBH and
14			<u> </u>			greater than 3.28 ft (1 m) tall.	
15						grouter and to be it ( ) inj tall.	
			100 =	<ul> <li>Total Cover</li> </ul>			du) planta ragardiana -f
						Herb - All herbaceous (non-woo	
Woody Vine			Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
•	Plot Size (	30 ft. )					
Stratum		,	Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft in
1						height.	
2						-	
3				·			
4						Hydrophytic	
5						vegetation	
°				<b>T</b> ( ) O	·	-	
			=	<ul> <li>Total Cover</li> </ul>		present? Y	-
Remarks: (Include pr	noto numbers her	e or on a sepa	rate sheet				
Solidago sp. cons	ervativelv assi	aned FAC ir	dicator status	-			
Solidago op. oone	Structurely uso	9.100 1 / 0 1	alouior siulus	•			

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Depth	Matrix			lox Fea			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Toxtaro	rtemante
0-10	10YR 4/3	100					Silt loam	
				d Matrix	, CS=Co	overed or	Coated Sand Grains	
Location:	PL=Pore Lining,	M=Mati	ix					
ydric Soi	I Indicators:		Dark Su				Indicators for P	roblematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark S Park Surface (A1: Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface (# 2) S1) <b>8)</b> S4	(MLRA Loamy Deplete A11 Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) Irface (F6) Surface Surface (F13) (N dplain Sc terial (F2)	6) (F7) (s (F12) / <b>ILRA 13</b> /ILRA 13 21)(MLR/	Piedmont FI (MLRA 136, Very Shallov Other (Expla	v Dark Surface (TF12) ain in Remarks
estrictive ype: epth (inch	Layer (if observe es):	ed)			-		Hydric soil presen	t? <u>N</u>
						-		
emarks:								
emarks:								
emarks:								
emarks:								

Project/Site: Holloway-Knox 138 kV Transmission Lin	City/County: Ca	rroll Report Name <u>Upla</u> Sampling Date 6/6/2	nd PB-07,08 2018
Applicant/Owner: FirstEnergy	State: Oh		
Investigator(s) M. Thomayer, T.Qualio; Jacob:		wnship, Range S 21 T 12N R 5W	
Landform (hillslope, terrace, etc.) hillslope	Local relief (concav	e, convex, none) convex S	Slope (%): 2
Subregion (LRR or MLRA): LRR N Lat.			Datum: NAD 83
Soil Map Unit Name WnF - Westmoreland-Dekalb comple	ex, 40 to 70 percent slop	NWI Classification: N/A	
Are climatic/hydrologic conditions of the site typical for thi	-	es <u>X</u> No (If no, explain	
Are vegetatior, soil, or hydrology	significantly dis		es" <u>Yes</u>
Are vegetation, soil, or hydrology	naturally proble	matic: present? (If needed, explain any a	nswers in remarks
SUMMARY OF FINDINGS			
Hydrophytic vegetation present' Yes			
Hydric soil present? No	Is the sampled	l area within a wetland? No	
Wetland hydrology present? No			
Remarks:			
Upland data point adjacent to Wetlands PB-07	and PB-08, within m	naintained ROW.	
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minimum c	of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil Cracks (B6)	
Surface Water (A1)True Aqu	uatic Plants (B14)	Sparsely Vegetated Concave S	Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	Drainage Patterns (B10)	
Saturation (A3) Oxidized	Rhizospheres on Living	Moss Trim Lines (B16)	
Water Marks (B1) Roots (C		Dry-Season Water Table (C2)	
	e of Reduced Iron (C4)	Crayfish Burrows (C8)	
Drift Deposits (B3) Recent I	ron Reduction in Tilled	Saturation Visible on Aerial Ima	agery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunted or Stressed Plants (D1	)
Iron Deposits (B5) Thin Mu	ck Surface (C7)	Geomorphic Position (D2)	
Inundation Visible on AerialOther (E	xplain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		Microtopographic Relief (D4)	
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes No	Depth (inches):	Wetland	
Water table present? Yes No	Depth (inches):	hydrology	
Saturation present? Yes No		present? N	
		present? N	—
Saturation present? Yes No _> (includes capillary fringe)	Depth (inches):		_
Saturation present? Yes No	Depth (inches):		
Saturation present? Yes <u>No</u> (includes capillary fringe) Describe recorded data (stream gauge, monitoring well, a	Depth (inches):		_
Saturation present? Yes No _> (includes capillary fringe)	Depth (inches):		
Saturation present? Yes <u>No</u> (includes capillary fringe) Describe recorded data (stream gauge, monitoring well, a	Depth (inches):		_
Saturation present? Yes <u>No</u> (includes capillary fringe) Describe recorded data (stream gauge, monitoring well, a	Depth (inches):		

				Sampling Point:	Upl-mdt-6/6/18-05/0
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	20% 50% 0 0
	Cover	Species	Status		
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	20 50
3				Woody Vine Stratum	0 0
4				-	
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	2 (A)
					(A)
9				Total Number of Dominant	
10				Species Across all Strata:	<u> </u>
	0 =	Total Cover		Percent of Dominant	
				Species that are OBL,	
Conling/Chruh	Abaaluta 0/	Deminant	Indiantar		
Sapling/Shrub Plot Size ( 15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	<u>66.67%</u> (A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Workshe	eet
2			·	Total % Cover of:	
					0
3				OBL species 0 x 1	
4				FACW species 0 x 2	
5				FAC species 50 x 3	
6				FACU species 50 x 4	
7				UPL species 0 x 5	
8				Column totals 100 (A)	350 (B)
9				Prevalence Index = $B/A =$	3.50
10					
···	0 =	Total Cover			
				Hydrophytic Vegetation In	diantara
Herb Stratum Plot Size ( 5 ft. )	Absolute %	Dominant	Indicator	Rapid test for hydrophyt	tic vegetation
	Cover	Species	Status	X Dominance test is >50%	, D
1 Poa pratensis	50	Y	FACU	Prevalence index is≤3.0	)*
2 Solidago sp.	30	Y	FAC	Morphological adaptatio	ons* (provide
3 Rubus pensilvanicus	20	Y	FAC	supporting data in Rema	
4		<u> </u>		sheet)	anto or on a coparato
				/	vegetetien*
5				Problematic hydrophytic	vegetation
6				(explain)	
7				*Indicators of hydric soil and wetle	and hydrology must be
8				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation S	Strata:
11				•	
				Tree - Woody plants 3 in. (7.6 cm	,
12				at breast height (DBH), regardles	s or neight.
13				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
14				greater than 3.28 ft (1 m) tall.	
15		<del></del>			
	100 =	Total Cover		Herb - All herbaceous (non-wood	y) plants, regardless of
				size, and woody plants less than	
Woody Vine Plot Size ( 20 ft )	Absolute %	Dominant	Indicator	, and needy plante looe than	
Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Woody vines - All woody vines g	reater than 3 28 ft in
1				height.	
2				noight.	
3				1	
4				Hydrophytic	
5				vegetation	
	0 =	Total Cover		present? Y	
					-
Pomarka: (Includo photo pumbara bara ar ar a casar	ato choot			1	
Remarks: (Include photo numbers here or on a separa	ale Sheel				
	Part and the				
Solidago sp. conservatively assigned FAC in	dicator status.				

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Depth	Matrix			lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Toxiaro	Romanie
0-10	10YR 4/3	100					Silt loam	
Tvpe: C=C	oncentration. D	=Depleti	on. RM=Reduced	d Matrix	. CS=Co	vered or	Coated Sand Grain	าร
	PL=Pore Lining,				,			
	Indicators:						Indicators	for Problematic Hydric Soils:
yane eei	maloutoror		Dark Su	urface (S	S7)		maioatoro	
Histisol	(A1)			· ·	w Surfac	e (S8)	2 cm N	luck (A10) ( <b>MLRA 147)</b>
Histic E	pipedon (A2)		(MLRA	147, 14	8)		Coast	Prairie Redox (A16) <b>(MLRA 147, 14</b>
Black H	listic (A3)		Thin Da	irk Surfa	ace (S9)		Piedmo	ont Floodplain Soils (F19
_	en Sulfide (A4)		(MLRA					136, 147)
	d Layers (A5)				Matrix (F	2		hallow Dark Surface (TF12
	uck (A10) (LRR		Deplete		<b>`</b>	-	Other	Explain in Remarks
	ed Below Dark S	•			rface (F6	,		
	ark Surface (A1	'	'		Surface	• •		
	Mucky Mineral (	,			sions (F8	,		
	I, MLRA 147, 14 Gleyed Matrix (S				e masse e (F13) <b>(N</b>		LRR N, MLRA 136)	
	Redox (S5)	94					MLRA 148)	
	d Matrix (S6)						A 127, 147)	
						- //	,	
Indicators	of hydrophytic ve	egetation	n and wetland hy	drology	must be	present	, unless disturbed o	r problem
		-	-	•••		•		
	Layer (if observe	ed)						
ype:					_		Hydric soil p	resent? N
Depth (inch	es):				-			
Remarks:								
ternarks.								

		Report Name Upland PB-09,10			
	kV Transmission Line City/County: Harr				
Applicant/Owner: FirstEnergy	State: Ohio				
Investigator(s) <u>M. Thomayer, T.Qu</u> Landform (hillslope, terrace, etc.		vnship, Range S 20 T 12N R 5W convex, none convex Slope (%):			
Subregion (LRR or MLRA): LRR N	terrace Local relief (concave Lat.: 40.40764607	Long.: -81.05168331 Datum: NAD 83			
Soil Map Unit Name GsB - Glenford		NWI Classification: N/A			
Are climatic/hydrologic conditions of	the site typical for this time of the yea Ye	s X No (If no, explain in remarks			
Are vegetatior, soil	, or hydrology significantly distu	Irbed? Are "normal circumstances" Yes			
Are vegetatior , soil	, or hydrology naturally problem				
		(If needed, explain any answers in remarks			
SUMMARY OF FINDINGS					
Hydrophytic vegetation present'	No				
Hydric soil present?	No Is the sampled a	area within a wetland? No			
Wetland hydrology present?	No				
Remarks:					
Nomano.					
Upland data point adjacent to	Wetlands PB-09 and PB-10, within ma	aintained ROW.			
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one	s required: check all that apply)	Surface Soil Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)			
Saturation (A3)		Moss Trim Lines (B16)			
Water Marks (B1)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)			
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)			
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)			
Imagery (B7)		Microtopographic Relief (D4)			
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)			
Aquatic Fauna (B13)					
Aquatic Fauna (B13)	No X Depth (inches):	Wetland			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes	No X Depth (inches):	Wetland			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes	No X Depth (inches):	hydrology			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes					
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes	No X Depth (inches):	hydrology			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe)	No X Depth (inches):	hydrology present? N			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe)	No X Depth (inches): No X Depth (inches):	hydrology present? N			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe) Describe recorded data (stream gauge	No X Depth (inches): No X Depth (inches):	hydrology present? N			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe)	No X Depth (inches): No X Depth (inches):	hydrology present? N			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe) Describe recorded data (stream gauge	No X Depth (inches): No X Depth (inches):	hydrology present? N			
Aquatic Fauna (B13) Field Observations: Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe) Describe recorded data (stream gauge	No X Depth (inches): No X Depth (inches):	hydrology present? N			

							Sampling Point: Upl-mdt-6/6/20 50/20 Thresholds
	Diet Cine (	20.4	`	Absolute %	Dominant	Indicator	20% 50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum 0 0
							Sapling/Shrub Stratum 0 0
							Herb Stratum 22 55
							Woody Vine Stratum 0 0
							Dominance Test Worksheet
					·		Number of Dominant
							Species that are OBL,
							FACW, or FAC: 1 (A)
							Total Number of Dominant
				0 =	Total Cover		Species Across all Strata: <u>2</u> (B) Percent of Dominant
							Species that are OBL,
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:
							Prevalence Index Worksheet
				<u> </u>			Total % Cover of:
							OBL species $0 \times 1 = 0$
							FACW species $0 \times 2 = 0$
							FAC species $85 \times 3 = 255$
						·	FACU species $25 \times 4 = 100$
							UPL species $0 \times 5 = 0$
							Column totals $110$ (A) $355$ (B) Prevalence Index = B/A = $3.23$
							Frevalence index = D/A = -3.23
				0 =	Total Cover		Hydrophytic Vegetation Indicators:
Herb Stratum	Plot Size (	5 ft.	)	Absolute %	Dominant	Indicator	Rapid test for hydrophytic vegetation
		0	,	Cover	Species	Status	Dominance test is >50%
Verbesina alter	nifolia			70	Y	FAC	Prevalence index is≤3.0*
Poa pratensis				25	Y	FACU	Morphological adaptations* (provide
Dicanthelium cl	andestinum			15	<u> </u>	FAC	supporting data in Remarks or on a sep
							sheet)
						·	Problematic hydrophytic vegetation*
							(explain)
							*Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic
							Definitions of Vegetation Strata:
							Tree - Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height.
							<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH
				110 =	Total Cover		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardle
						Indiant	size, and woody plants less than 3.28 ft tall.
				Absolute %	Dominant	Indicator Status	Weedu vinee All weedu vinee meeter the second
Woody Vine	Plot Size (	30 ft.	)	Cover	Species		Woody vines - All woody vines greater than 3.28 ft
	Plot Size (	30 ft.	)	Cover	Species		height.
Woody Vine Stratum	Plot Size (		)	Cover	Species		
Woody Vine Stratum	、 			Cover			height.
				Cover	Species		
Woody Vine Stratum					Total Cover		height. Hydrophytic
Woody Vine Stratum							height. Hydrophytic vegetation
Woody Vine Stratum							height. Hydrophytic vegetation
Stratum							height. Hydrophytic vegetation
Stratum							height. Hydrophytic vegetation

r

	Matrix			Redox Features Texture F				Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	
0-10	10YR 4/3	100					Silt Ioam	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
*Location:	PL=Pore Lining,	M=Mat	rix					
lydric Soi	Indicators:						Indicators for I	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark S bark Surface (A1 Mucky Mineral (S <b>I, MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface ( <i>I</i> 2) S1) <b>8)</b> S4	(MLRA Loamy ( Deplete A11 Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Par	rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface e Masse e (F13) ( <b>N</b> dplain So terial (F2)	6) (F7 <u>)</u> s (F12) ↓ <b>1LRA 13</b> iils (F19) 21) <b>(MLR</b> /	Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 ain in Remarks
Restrictive Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil preser	nt? <u>N</u>
Remarks:								

	City/Caustan		Report Name Upland PB-11		
Project/Site: Holloway-Knox 138 kV Transmission Lin	·		Sampling Date 6/07/2018		
Applicant/Owner: <u>FirstEnergy</u> Investigator(s) M. Thomayer, T.Qualio; Jacob		<u>Dhio</u> Township, Range	Sampling Point: <u>Upl-mdt-6/07/2018-0</u>		
Landform (hillslope, terrace, etc.) plain		ave, convex, none)			
Subregion (LRR or MLRA): LRR N Lat.		Long.: -81.(			
Soil Map Unit Name GSB - Glenford silt loam, 3 to 8 perc			ssification: N/A		
Are climatic/hydrologic conditions of the site typical for the	s time of the yea	Yes X No	(If no, explain in remarks		
Are vegetatior, soil, or hydrology	significantly d	listurbed? Are '	"normal circumstances" Yes		
Are vegetatior, soil, or hydrology	naturally prob		ent? eeded, explain any answers in remarl		
SUMMARY OF FINDINGS					
Hydrophytic vegetation present No					
Hydric soil present? No	Is the sample	ed area within a we	etland? No		
Wetland hydrology present? No					
Remarks:					
Lipland data point adjacent to Watland PR 11 a	nd within maintain				
Upland data point adjacent to Wetland PB-11 a		ieu ROW.			
HYDROLOGY Wetland Hydrology Indicators:		Coopdon / Ir	diactors (minimum of two required)		
	that any ha	-	ndicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all			Soil Cracks (B6)		
	uatic Plants (B14)		Vegetated Concave Surface (B8)		
	en Sulfide Odor (C1)		Patterns (B10)		
	Rhizospheres on Livir	.9	m Lines (B16)		
Water Marks (B1) Roots (C	•		son Water Table (C2)		
	e of Reduced Iron (C4)		Crayfish Burrows (C8)		
	ron Reduction in Tilled		n Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) Soils (C			or Stressed Plants (D1)		
	ck Surface (C7)		phic Position (D2)		
Inundation Visible on AerialOther (E	xplain in Remarks)		Aquitard (D3)		
Imagery (B7)			ographic Relief (D4)		
Water-Stained Leaves (B9)		FAC-Neu	ıtral Test (D5)		
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes No _>			Wetland		
Water table present? Yes No			hydrology		
	C Depth (inches):	'	present? N		
(includes capillary fringe)					
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	inspections), if ava	ila		
	- · ·	-			
Remarks:					

							50/20 Thresholds		
<b>- - - -</b>			,	Absolute %	Dominant	Indicator		20%	50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0	0
							Sapling/Shrub Stratum	0	Õ
							Herb Stratum	22	55
							Woody Vine Stratum	0	0
1			_ :						
5							Dominance Test Workshee	et	
<u> </u>							Number of Dominant		
							Species that are OBL,		(A)
3							FACW, or FAC:	1	(A)
)							Total Number of Dominant Species Across all Strata:	2	(B)
				0 =	Total Cover		Percent of Dominant		(B)
							Species that are OBL,		
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	50.00	<u>%</u> (A/B)
							Prevalence Index Workshe	et	
2							Total % Cover of:		
3							OBL species 0 x 1		)
1							FACW species 0 x 2		
5							FAC species 25 x 3		
<u> </u>							FACU species 85 x 4		10
							UPL species <u>0</u> x 5		
<u> </u>							Column totals <u>110</u> (A)		5 (B)
)				<u> </u>			Prevalence Index = B/A =	3.77	
			·	0 =	Total Cover				
				Absolute %	Dominant	Indicator	Hydrophytic Vegetation In Rapid test for hydrophyt		
Herb Stratum	Plot Size (	5 ft.	)	Cover	Species	Status	Dominance test is >50%		
Poa pratensis				65	Y	FACU	Prevalence index is≤3.0		
2 Solidago rugosa				25	<u> </u>	FAC	Morphological adaptatio		/ide
3 Trifolium repens				20	<u> </u>	FACU	supporting data in Rema		
. <u> </u>							sheet)		
5							Problematic hydrophytic	vegetat	on*
5							(explain)	Ū	
,							*Indicators of hydric soil and wetla	and hydrol	ogy must b
3							present, unless disturbed or probl		
)			·				Definitions of Vegetation S	Strata:	
							Tree - Woody plants 3 in. (7.6 cm		in diamete
2							at breast height (DBH), regardless		
\$						. <u> </u>	Sapling/shrub - Woody plants le	ss than 3	in. DBH ar
							greater than 3.28 ft (1 m) tall.		
				=	Total Cover		Herb - All herbaceous (non-wood		•
Woody Vine				Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Woody vines - All woody vines g	reater tha	n 3 28 ft in
olididili				00101	Openice	Olaldo	height.	iealei liia	11 3.20 It III
3									
1							Hydrophytic		
<u> </u>							vegetation		
				0 =	Total Cover		present? N		
marks: (Include photo	numbers her	e or on a se	eparate	e sheet			<u> </u>		

Depth	Matrix		Red	dox Fea	tures		Tev	ture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	107	uic	Remarks
0-10	10 YR 5/3	100					loam		
	oncentration, D= PL=Pore Lining,		on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sar	nd Grains	
Hvdric Soi	Indicators:						Ind	icators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy S Sandy S Sandy I Sandy I	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark Si ark Surface (A1) Mucky Mineral (S Mucky Mineral (S Mucky Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) 51) <b>8)</b> 4	(MLRA Thin Da (MLRA Loamy Deplete A11 Redox Redox Iron-Ma Umbric Piedmo	ue Belo 147, 14 ark Surfa 147, 14 Gleyed ad Matrix Dark Su ad Dark Depress Surface not Flood rent Ma	w Śurfac <b>8</b> ) ace (S9) <b>8)</b> Matrix (F (F3) Irface (F6 Surface sions (F8 e Masse e (F13) ( <b>N</b> dplain Sc terial (F2	2 (F7) ) s (F12) MLRA 13 MLRA 13 (F19) 21)(MLR	LRR N, MLR 66, 122) MLRA 148) A 127, 147)	Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 ain in Remarks
Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric	soil prese	nt? <u>N</u>
Remarks:									

Project/Site: Holloway-Knox 138 kV Tra	ansmission Line City/County:	Report NameUpland PB-12,13HarrisonSampling Date6/07/2018
Applicant/Owner: FirstEnergy	State:	Ohio Sampling Point: Upl-mdt-6/07/2018-01
Investigator(s) M. Thomayer, T.Qualio; Ja		n, Township, Range S 19 T 12N R 5W
Landform (hillslope, terrace, etc.) hillslo		ncave, convex, none) <u>convex</u> Slope (%): 1
Subregion (LRR or MLRA): LRR N	Lat.: 40.39812932	Long.: -81.05192015 Datum: NAD 83
Soil Map Unit Name CnD - Coshocton silt I	oam, 15 to 25 percent slope	NWI Classification: N/A
Are climatic/hydrologic conditions of the site	••	Yes X No (If no, explain in remarks
Are vegetatior, soil,	or hydrology significantly	/ disturbed? Are "normal circumstances" Yes
Are vegetation , soil , o	or hydrology naturally pr	oblematic: present? (If needed, explain any answers in remarks
SUMMARY OF FINDINGS		
Hydrophytic vegetation present Yes		
Hydric soil present? No	Is the sam	pled area within a wetland? No
Wetland hydrology present? No	-	
	<u> </u>	
Remarks:		
Upland data point adjacent to Wetl	ands PB-12 and PB-13, with	in maintained ROW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requ		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Li	vingMoss Trim Lines (B16)
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C	4) Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tille	edSaturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes	No X Depth (inches):	
Water table present? Yes	No X Depth (inches):	
Saturation present? Yes	No X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, mo	nitoring well, aerial photos, previo	us inspections), if availa
Remarks:		
i tomanto.		

				Sampling Point:	Upl-mdt-6/07/20
				50/20 Thresholds	
Tree Stratum Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	0 0
				Sapling/Shrub Stratum	0 0
				Herb Stratum	23 58
				Woody Vine Stratum	0 0
·					
				Dominance Test Workshe	et
	·	·		Number of Dominant	
·	- <u> </u>			Species that are OBL,	2 (A)
	·			FACW, or FAC:	(A)
	·			Total Number of Dominant Species Across all Strata:	2 (B)
	0 =	Total Cover			(D)
				Percent of Dominant	
		<b>D</b> · · ·		Species that are OBL,	100.000/ ///
Sapling/Shrub Plot Size (15 ft.)	Absolute %	Dominant	Indicator	FACW, or FAC:	<u>100.00%</u> (A/I
	Cover	Species	Status		
				Prevalence Index Worksh	eet
				Total % Cover of:	
				OBL species 0 x 1	
	·			FACW species 0 x 2	
	·			FAC species <u>115</u> x 3	
	·			FACU species 0 x 4	
	·			UPL species 0 x 5 Column totals 115 (A)	
	·	. <u></u>		Prevalence Index = $B/A =$	3.00
	·				0.00
	0 =	Total Cover			
	<u> </u>			Hydrophytic Vegetation Ir	ndicators:
	Absolute %	Dominant	Indicator	Rapid test for hydrophy	
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
Solidago rugosa	50	Y	FAC	X Prevalence index is≤3.0	0*
2 Dichanthelium clandestinum	30	Y	FAC	Morphological adaptation	ons* (provide
3 Verbesina alternifolia	20	N	FAC	supporting data in Rem	arks or on a sepa
Rubus pensilvanicus	15	N	FAC	sheet)	
				Problematic hydrophytic	c vegetation*
				(explain)	
<u></u>	·	·		*Indicators of hydric soil and wet	
3	• <u> </u>	. <u></u>		present, unless disturbed or prob	plematic
				Definitions of Vegetation	Strata:
,	·			Tree - Woody plants 3 in. (7.6 cr	
				at breast height (DBH), regardles	,
					-
	·			Sapling/shrub - Woody plants lo	ess than 3 in. DBH a
				greater than 3.28 ft (1 m) tall.	
	115 _=	<ul> <li>Total Cover</li> </ul>		Herb - All herbaceous (non-wood	dy) plants, regardles
		Dami	la alla d	size, and woody plants less than	
Woody Vine Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		
Stratum	Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft i
2	<u> </u>	·		height.	
	·	<u> </u>			
	·				
	·	·		Hydrophytic	
				vegetation	
	=	Total Cover		present? Y	-
marks: (Include photo numbers here or on a sepa	rato shoot			1	
marks. (include photo numbers here of on a sepa	iale Sileel				
c					
S					

Depth	Matrix			dox Fea			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 4/3	100					Silt Ioam	
		Devilet	DM Deduce					
	PL=Pore Lining,			a Matrix	, 05=00	overed or	Coated Sand Grains	
		wi=wau	IX				la dia stara fa	- Basklansetis Ukudais Osilas
yaric Soli	Indicators:		Dark Si	urface (S	37)		Indicators for	Problematic Hydric Soils:
Histisol	(A1)				w Surfac	e (S8)	2 cm Muc	k (A10) ( <b>MLRA 147)</b>
	pipedon (A2)		•	147, 14		- ()		irie Redox (A16) <b>(MLRA 147, 148</b>
Black H	listic (A3)		Thin Da	ark Surfa	áce (S9)		Piedmont	Floodplain Soils (F19
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 13	6, 147)
	d Layers (A5)				Matrix (F	2		low Dark Surface (TF12
	uck (A10) <b>(LRR</b>		Deplete		· · ·		Other (Ex	plain in Remarks
	d Below Dark S				Irface (F6			
	ark Surface (A1	,			Surface	. ,		
-	Mucky Mineral (	'			sions (F8			
	, MLRA 147, 14						LRR N, MLRA 136)	
	Gleyed Matrix (S	64			e (F13) <b>(N</b>		6, 122) MLRA 148)	
	Redox (S5) d Matrix (S6)						A 127, 147)	
							A 121, 141)	
ndicators	of hydrophytic ve	egetation	n and wetland hy	drology	must be	present	, unless disturbed or pr	oblem
	, , ,	0	,	0,		•	, i	
	Layer (if observe	ed)						
ype:	)				-		Hydric soil pres	ent? <u>N</u>
epth (inch	es):				-			
emarks:								
0a.no.								

		Report Name Upland PB-14	
Project/Site: Holloway-Knox 138 kV Transmission Lin		Harrison Sampling Date 6/07/2018	
Applicant/Owner: FirstEnergy	State: C		018-04
Investigator(s) M. Thomayer, T.Qualio; Jacob	Section,	Township, Range S 19 T 12N R 5W	-
Landform (hillslope, terrace, etc.) plain		ave, convex, none) convex Slope (%):	
Subregion (LRR or MLRA):         LRR N         Lat.           Soil Map Unit Name         WnE - Westmoreland-Dekalb complete         Lat.		Long.: -81.05263681 Datum: NA	D 83
Are climatic/hydrologic conditions of the site typical for thi	s time of the yea	Yes X No (If no, explain in remark	S
Are vegetatior , soil , or hydrology	significantly of	disturbed? Are "normal circumstances" Yes	
Are vegetation , soil , or hydrology	naturally prot		-
		(If needed, explain any answers in	emarks
SUMMARY OF FINDINGS			
Hydrophytic vegetation present No			
Hydric soil present? No	Is the sampl	led area within a wetland? No	
Wetland hydrology present? No			
Demortor			
Remarks:			
Upland data point adjacent to Wetland PB-14 a	nd within maintain	and ROW	
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two requ	ired)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil Cracks (B6)	
Surface Water (A1) True Aq	uatic Plants (B14)	Sparsely Vegetated Concave Surface (B8	)
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	Drainage Patterns (B10)	
	Rhizospheres on Livir		
Water Marks (B1) Roots (C	•	Dry-Season Water Table (C2)	
	e of Reduced Iron (C4)		
	ron Reduction in Tilled		
Algal Mat or Crust (B4) Soils (C	6)	Stunted or Stressed Plants (D1)	
Iron Deposits (B5) Thin Mu	ck Surface (C7)	Geomorphic Position (D2)	
Inundation Visible on Aerial Other (E	xplain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		Microtopographic Relief (D4)	
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes No	Depth (inches):	Wetland	
Water table present? Yes No		hydrology	
Saturation present? Yes No		present? N	
(includes capillary fringe)			
(includes capillary fringe)			
(includes capillary fringe) Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	s inspections), if availa	
	erial photos, previous	s inspections), if availa	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	s inspections), if availa	
	erial photos, previous	s inspections), if availa	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	s inspections), if availa	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	s inspections), if availa	

						Sampling Point: Upl-mdt-6/07/201
			, Absolute %	% Dominant	Indicator	
Tree Stratum	Plot Size (	30 ft.	) Cover	Species	Status	20% 50%
			Cover	Species	Status	Tree Stratum 0 0
						Sapling/Shrub Stratum 0 0
						Herb Stratum 17 43
						Woody Vine Stratum 0 0
						Dominance Test Worksheet
						Number of Dominant
						Species that are OBL,
						FACW, or FAC: 0 (A)
						Total Number of Dominant
						Species Across all Strata: <u>3</u> (B)
			0	= Total Cover		Percent of Dominant
				—		Species that are OBL,
Sapling/Shrub			, Absolute %	% Dominant	Indicator	FACW, or FAC: 0.00% (A/B
Stratum	Plot Size (	15 ft.	) Cover	Species	Status	
Stratum			Cover	Opecies	Status	
						Prevalence Index Worksheet
						Total % Cover of:
						OBL species 0 x 1 = 0
						FACW species $0 \times 2 = 0$
						FAC species $15 \times 3 = 45$
						FACU species 70 x 4 = 280
						UPL species $0 \times 5 = 0$
						Column totals 85 (A) 325 (B)
						Prevalence Index = $B/A = 3.82$
			0	= Total Cover		
				—		Hydrophytic Vegetation Indicators:
Herb Stratum	Plot Size (	5 ft.	) Absolute %	% Dominant	Indicator	Rapid test for hydrophytic vegetation
	1 101 0126 (	5 11.	Cover	Species	Status	Dominance test is >50%
Fragaria virgin	iana		30	Y	FACU	Prevalence index is≤3.0*
Rubus alleghe			20	Y	FACU	Morphological adaptations* (provide
Poa pratensis			20	<u> </u>	FACU	supporting data in Remarks or on a separ
Solidago rugos	a		15	N	FAC	sheet)
						Problematic hydrophytic vegetation*
						(explain)
						*Indicators of hydric soil and wetland hydrology must b
						present, unless disturbed or problematic
						present, unless disturbed of problematic
						Definitions of Vegetation Strata:
						Tree - Woody plants 3 in. (7.6 cm) or more in diameter
						at breast height (DBH), regardless of height.
						Openite address to Marcala address to the state of the State
						<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH ar greater than 3.28 ft (1 m) tall.
				= Total Cover		greater than 3.28 ft (1 m) tall.
			85	= Total Cover		greater than 3.28 ft (1 m) tall.
Woody Vine			85	= Total Cover % Dominant	Indicator	greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless
	Plot Size (	30 ft.	85	= Total Cover	Indicator Status	greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> - All woody vines greater than 3.28 ft in
Woody Vine			85	= Total Cover % Dominant		greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum		30 ft.	85 ) Absolute % Cover	= Total Cover % Dominant		greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> - All woody vines greater than 3.28 ft in
Woody Vine Stratum	Plot Size (	30 ft.	85 ) Absolute % Cover	= Total Cover % Dominant		<ul> <li>Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall.</li> <li>Woody vines - All woody vines greater than 3.28 ft in</li> </ul>
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % ) Cover	= Total Cover % Dominant		greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> - All woody vines greater than 3.28 ft in
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % ) Cover	= Total Cover % Dominant		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % ) Cover	= Total Cover % Dominant		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height. Hydrophytic
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % Cover	= Total Cover % Dominant Species		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height. Hydrophytic vegetation
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % Cover	= Total Cover % Dominant Species		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height. Hydrophytic vegetation
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % Cover	= Total Cover % Dominant Species		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height. Hydrophytic vegetation
Woody Vine Stratum	Plot Size (	30 ft.	) Absolute % Cover	= Total Cover % Dominant Species		greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height. Hydrophytic vegetation

Depth	Matrix		Rec	lox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10 YR 4/3	100					Silt loam	
Type: C=C	concentration, D=	=Depleti	on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains	
*Location:	PL=Pore Lining,	M=Mat	rix					
lydric Soi	I Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark Su park Surface (A12 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface ( <i>I</i> 2) S1) <b>8)</b> S4	(MLRA Thin Da (MLRA Loamy Deplete A11 Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Su Depress inganes Surface nt Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface sions (F8 e Masse e (F13) ( <b>N</b> dplain Sc terial (F2)	52 (F7) (F7) (F2) MLRA 13 MLRA 13 Vils (F19) 21)(MLR.	Coast Prai Piedmont F (MLRA 130 Very Shallo Other (Exp	ow Dark Surface (TF12 lain in Remarks
Restrictive Гуре: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil prese	ent? <u>N</u>
、 ・								
Remarks:								
Remarks:								
Remarks:								

		Report Name Upland PB-15
Project/Site: Holloway-Knox 138 kV Transmission		rrison Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy	State: Oh	io Sampling Point: <u>U-mdt-6/07/2018-08</u> wnship, Range S 24 T 11N R 5W
Investigator(s) M. Thomayer, T.Qualio; Jacob: Landform (hillslope, terrace, etc. terrace	Local relief (concav	e, convex, none) convex Slope (%):
Subregion (LRR or MLRA): LRR N	Local Teller (concav Lat.: 40.37875768	Long.: -81.05310721 Datum: NAD 83
Soil Map Unit Name Me - Melvin silt loam, frequently		
Are climatic/hydrologic conditions of the site typical for	r this time of the yea Y	es X No (If no, explain in remarks
Are vegetation , soil , or hydrolog	y significantly dis	turbed? Are "normal circumstances" Yes
Are vegetatior, soil, or hydrolog	naturally proble	
SUMMARY OF FINDINGS		(If needed, explain any answers in remar
Hydrophytic vegetation present No Hydric soil present? No	is the sampler	l area within a wetland? No
	is the samplet	
Wetland hydrology present? No		
Remarks:		
Upland data point adjacent to Wetland PB-	15 and within maintained	d ROW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec	k all that apply)	Surface Soil Cracks (B6)
	e Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	1 ( )	
	rogen Sulfide Odor (C1)	Drainage Patterns (B10)
	lized Rhizospheres on Living	Moss Trim Lines (B16)
	ts (C3)	Dry-Season Water Table (C2)
	sence of Reduced Iron (C4)	Crayfish Burrows (C8)
	ent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
	s (C6) I Muck Surface (C7)	Geomorphic Position (D2)
	, ,	
	er (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		Wetlend
Surface water present? Yes No	X Depth (inches):	Wetland
Water table present? Yes No	X Depth (inches):	hydrology
Saturation present? Yes No	X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring w	all aerial photos, previous ir	spections) if availa
stream gauge, monitoring w	aenai priotos, previous li	
Remarks:		

Tree Stratum       Plot Size ( 30 ft. )       Absolute % Cover       Dominant Species       Indicator Status         2	20%50%Tree Stratum00Sapling/Shrub Stratum00Herb Stratum2973Woody Vine Stratum00Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:1(A)Total Number of DominantSpecies that are OBL,FACW, or FAC:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of:OBL species0x 1 =0FACW species0x 2 =0FACU species105x 4 =420UPL species0x 5 =0Column totals145(A)540Prevalence Index = B/A =3.723.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is<3.0*Morphological adaptations* (provide supporting data in Remarks or on a separ
Cover     Species     Status	Sapling/Shrub Stratum00Herb Stratum2973Woody Vine Stratum00Dominance Test Worksheet0Number of DominantSpecies that are OBL,FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of:OBL species0X 1 =0FACW species0X 2 =0FACU species105X 4 =420UPL species0X 5 =0Column totals145(A)540Prevalence Index = B/A =3.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is <3.0*
Image: statum       Image: status       Image: status       Image: status         Image: statum       Image: status       Image: status       Image: status         Image: statum       Image: status       Image: status       Image: status         Image: status       Image: status       Image: status       Image: status       Image: status         Image: status       Image: status       Image: status       Image: status       Image: status       Image: status         Image: status       Image: status       Image: status       Image: status       Image: status       Image: status	Herb Stratum2973Woody Vine Stratum00Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:1FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2Species Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/E)Prevalence Index WorksheetTotal % Cover of:OBL species0x 1 =0FACW species0x 2 =0FACU species105x 4 =420UPL species0x 5 =0Column totals145(A)540Prevalence Index = B/A =3.723.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is <3.0*
Image: Sapling/Shrub Stratum       Plot Size ( 15 ft. )       Absolute % Cover       Dominant Status         Image: Stratum       Plot Size ( 15 ft. )       Absolute % Cover       Dominant Status         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Plot Size ( 5 ft. )       Absolute % Cover       Dominant Species       Indicator Stratus         Image: Stratum       Plot Size ( 5 ft. )       Absolute % Cover       Dominant Species       Status         Image: Stratum       Plot Size ( 5 ft. )       Absolute % Cover       Species       Status         Image: Stratum       Stratus       Stratus       Species       Status         Image: Stratum       Stratus       Stratus       Species       Status         Image: Stratus       Stratus       Stratus       Species       Status         Image: Stratus       Stratus       Stratus       Stratus       Stratus         Image: Stratus       Stratus       Stratus       Stratus       Stratus         Image: Stratus       Stratus       Stratus <t< td=""><td>Woody Vine Stratum00Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Percent of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of:OBL species0X 2 =0FACU species0X 3 =120FACU species0X 5 =0Column totals145(A)540Prevalence Index = B/A =3.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is &gt;50%Prevalence index is&lt;3.0*</td>Morphological adaptations* (providesupporting data in Remarks or on a sepa_sheet)Problematic hydrophytic vegetation*</t<>	Woody Vine Stratum00Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Percent of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of:OBL species0X 2 =0FACU species0X 3 =120FACU species0X 5 =0Column totals145(A)540Prevalence Index = B/A =3.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is<3.0*
Image: Saping/Shrub Stratum       Plot Size ( 15 ft. )       Absolute % Cover       Dominant Species       Indicator Status         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stra	Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of:OBL species0X 1 =0FACW species0X 2 =0FACU species0X 3 =120FACU species0X 5 =0Column totals145I45(A)540(B)Prevalence Index = B/A =3.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is<3.0*
	Number of Dominant Species that are OBL, FACW, or FAC:1(A)Total Number of Dominant Species Across all Strata:2(B)Percent of Dominant Species that are OBL, FACW, or FAC:50.00%(A/B)Prevalence Index WorksheetTotal % Cover of: OBL species0x 1 =0FACW species0x 2 =0FAC species40x 3 =120FAC species0x 5 =0Column totals145(A)540Prevalence Index = B/A =3.72
Image: Sapling/Shrub Stratum       Plot Size ( 15 ft. )       Absolute % Dominant Species       Indicator Status         Sapling/Shrub Stratum       Plot Size ( 15 ft. )       Absolute % Cover       Dominant Species       Indicator Status         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum       Image: Stratum         Image: Stratum       Image: Stratum       Image: Stratum       Image: Strat	FACW, or FAC:1(A)Total Number of DominantSpecies Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC: $50.00\%$ (A/BFACW, or FAC: $50.00\%$ (A/BTotal % Cover of:OBL species $0$ $x 1 = 0$ FAC wspecies $0$ $x 2 = 0$ FAC species $40$ $x 3 = 120$ FAC species $0$ $x 5 = 0$ Column totals $145$ (A) $540$ (B)Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is< $3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separesheet)Problematic hydrophytic vegetation*
Image: Sapling/Shrub Stratum       Plot Size (       15 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         Image: Stratum       Plot Size (       15 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         Image: Stratum       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Image: Stratus         Image: Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Image: Stratus         Image: Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Species       Status         Image: Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Species       Status         Image: Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Species       Status         Image: Stratus       30       Y       FAC       Y       FAC         Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus         Image: Stratus       Image: Stratus       Image: Stratus       Image: Stratus       <	Total Number of Dominant Species Across all Strata:2(B)Percent of Dominant Species that are OBL, FACW, or FAC: $50.00\%$ (A/BPrevalence Index WorksheetTotal % Cover of: OBL species $0 \times 1 = 0$ FAC species $0 \times 2 = 0$ FAC speciesFAC species $0 \times 2 = 0$ FAC species $0 \times 5 = 0$ Column totals $145$ (A)DPrevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separ sheet) Problematic hydrophytic vegetation*
0       = Total Cover         Sapling/Shrub Stratum       Plot Size (       15 ft. )       Absolute % Cover       Dominant Species       Indicator Status	Species Across all Strata:2(B)Percent of DominantSpecies that are OBL,FACW, or FAC: $50.00\%$ (A/B <b>Prevalence Index Worksheet</b> Total % Cover of:0OBL species0x 1 =OBL species0x 2 =FAC wspecies0x 3 =TAC species0x 5 =OColumn totals145(A)Species Index = B/A =3.72Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separe sheet)Problematic hydrophytic vegetation*
Image: Constraint of the stratum       Image: Constraint of the stratum       Indicator Status         Sapling/Shrub Stratum       Plot Size (15 ft.))       Absolute % Cover       Dominant Species       Indicator Status         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image: Cover       Image: Cover         Image: Cover       Image: Cover       Image: Cover       Image:	Percent of Dominant Species that are OBL, FACW, or FAC:50.00% (A/BPrevalence Index WorksheetTotal % Cover of: OBL speciesOBL species $0 \times 1 = 0$ FACW speciesFACW species $0 \times 2 = 0$ FACU speciesFACU species $40 \times 3 = 120$ FACU speciesFACU species $0 \times 5 = 0$ Column totalsOutput $145$ (A)Facu species $0 \times 5 = 0$ Column totalsPrevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators: Dominance test is >50% Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separ sheet) Problematic hydrophytic vegetation*
Stratum       Flot Size (* 15 it. *)       Cover       Species       Status	FACW, or FAC:50.00% (A/BPrevalence Index WorksheetTotal % Cover of:OBL species0 $x 1 = 0$ FACW species0 $x 2 = 0$ 0FAC species40 $x 3 = 120$ FACU species105 $x 4 = 420$ UPL species0 $x 5 = 0$ Column totals145(A)540(B)Prevalence Index = B/A =3.72Approximation Indicators:
Stratum       Flot Size (       15 ft.       )       Cover       Species       Status	Prevalence Index WorksheetTotal % Cover of:OBL species $0$ X 1 = $0$ FACW species $0$ X 2 = $0$ FAC species $40$ X 3 = $120$ FACU species $105$ X 4 = $420$ UPL species $0$ X 5 = $0$ Column totals $145$ (A) $540$ Prevalence Index = B/A = $3.72$ Applied test for hydrophytic vegetationDominance test is >50%Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a sepa
Image: stratum       Plot Size (       5 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         poa pratensis       80       Y       FACU         Solidago rugosa       30       Y       FAC         Trifolium pratense       25       N       FACU         Vermonia gigantea       10       N       FAC         Image: stratus       Image: stratus       Image: stratus         Solidago rugosa       30       Y       FAC         Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus <td>Total % Cover of:OBL species<math>0</math><math>x 1 =</math><math>0</math>FACW species<math>0</math><math>x 2 =</math><math>0</math>FAC species<math>40</math><math>x 3 =</math><math>120</math>FACU species<math>105</math><math>x 4 =</math><math>420</math>UPL species<math>0</math><math>x 5 =</math><math>0</math>Column totals<math>145</math>(A)<math>540</math>Prevalence Index = B/A =<math>3.72</math>Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is &gt;50%Prevalence index is <math>\leq 3.0^*</math>Morphological adaptations* (provide supporting data in Remarks or on a sepasheet)Problematic hydrophytic vegetation*</td>	Total % Cover of:OBL species $0$ $x 1 =$ $0$ FACW species $0$ $x 2 =$ $0$ FAC species $40$ $x 3 =$ $120$ FACU species $105$ $x 4 =$ $420$ UPL species $0$ $x 5 =$ $0$ Column totals $145$ (A) $540$ Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators:Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a sepasheet)Problematic hydrophytic vegetation*
Image: status poa pratensis       80       Y       FACU         Solidago rugosa       30       Y       FACU         Trifolium pratense       25       N       FACU         Vernonia gigantea       10       N       FAC         Image: status poa       10       N       Image: status poa         Image: status poa       Image: status poa       Image: status poa       Image: status poa         Image: status poa       Image: status poa       Image: status poa       Image: status poa       Image: status poa         Image: status poa       Image: status poa <t< td=""><td>OBL species       0       x 1 =       0         FACW species       0       x 2 =       0         FAC species       40       x 3 =       120         FACU species       105       x 4 =       420         UPL species       0       x 5 =       0         Column totals       145       (A)       540       (B)         Prevalence Index = B/A =       3.72         Hydrophytic Vegetation Indicators:      </td></t<>	OBL species       0       x 1 =       0         FACW species       0       x 2 =       0         FAC species       40       x 3 =       120         FACU species       105       x 4 =       420         UPL species       0       x 5 =       0         Column totals       145       (A)       540       (B)         Prevalence Index = B/A =       3.72         Hydrophytic Vegetation Indicators:
Image: stratum       Plot Size (       5 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         poa pratensis       80       Y       FACU         Solidago rugosa       30       Y       FAC         Trifolium pratense       25       N       FACU         Vernonia gigantea       10       N       FAC         Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       80       Y       FACU         Solidago rugosa       30       Y       FAC         Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus       Image: stratus         Image: stratus       Image: stratus       Image: stratus       Image: stratus	FACW species $0$ $x 2 =$ $0$ FAC species $40$ $x 3 =$ $120$ FACU species $105$ $x 4 =$ $420$ UPL species $0$ $x 5 =$ $0$ Column totals $145$ $(A)$ $540$ Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators:
Image: second system       Image: second system <td< td=""><td>FAC species<math>40</math> x 3 =<math>x 3 =</math><math>120</math> 420FACU species<math>105</math> x 4 =<math>420</math> 420UPL species<math>0</math> x 5 =<math>0</math> column totals<math>145</math> (A)<math>540</math> (B)Prevalence Index = B/A =<math>3.72</math>Hydrophytic Vegetation Indicators: Commance test is &gt;50% Prevalence index is <math>\leq 3.0^*</math> Morphological adaptations* (provide supporting data in Remarks or on a separation sheet) Problematic hydrophytic vegetation*</td></td<>	FAC species $40$ x 3 = $x 3 =$ $120$ 420FACU species $105$ x 4 = $420$ 420UPL species $0$ x 5 = $0$ column totals $145$ (A) $540$ (B)Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators: Commance test is >50% Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separation sheet) Problematic hydrophytic vegetation*
Barriel Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         1       poa pratensis       80       Y       FACU         2       Solidago rugosa       30       Y       FACU         3       Trifolium pratense       25       N       FACU         4       Vernonia gigantea       10       N       FAC         3	FACU species $105$ $x 4 =$ $420$ UPL species $0$ $x 5 =$ $0$ Column totals $145$ $(A)$ $540$ $(B)$ Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators:         Rapid test for hydrophytic vegetation         Dominance test is >50%         Prevalence index is< $3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separe sheet)         Problematic hydrophytic vegetation*
Image: space structure       I	UPL species $0$ $x 5 =$ $0$ Column totals $145$ (A) $540$ (B)         Prevalence Index = B/A = $3.72$ Hydrophytic Vegetation Indicators:         Rapid test for hydrophytic vegetation         Dominance test is >50%         Prevalence index is $\leq 3.0^*$ Morphological adaptations* (provide supporting data in Remarks or on a separe sheet)         Problematic hydrophytic vegetation*
3	Column totals       145       (A)       540       (B)         Prevalence Index = B/A =       3.72         Hydrophytic Vegetation Indicators:
Image: space of the system         Herb Stratum       Plot Size (       5 ft.       )       Absolute % Cover       Dominant Species       Indicator Status         1       poa pratensis       80       Y       FACU         2       Solidago rugosa       30       Y       FAC         3       Trifolium pratense       25       N       FACU         4       Vernonia gigantea       10       N       FAC         3       Image: species       Image: species       Image: species       Species         4       Vernonia gigantea       10       N       FAC         5       Image: species       Image: species       Image: species       Image: species         6       Image: species       Image: species       Image: species       Image: species       Image: species         6       Image: species       Image: species       Image: species       Image: species       Image: species       Image: species         7       Image: species         8       Image: species       Image: s	Prevalence Index = B/A =       3.72         Hydrophytic Vegetation Indicators:
0       = Total Cover         Herb Stratum       Plot Size (5 ft.))       Absolute % Cover       Dominant Species       Indicator Status         1       poa pratensis       80       Y       FACU         2       Solidago rugosa       30       Y       FAC         3       Trifolium pratense       25       N       FACU         4       Vernonia gigantea       10       N       FAC         3	Hydrophytic Vegetation Indicators:         Rapid test for hydrophytic vegetation         Dominance test is >50%         Prevalence index is≤3.0*         Morphological adaptations* (provide supporting data in Remarks or on a sepa sheet)         Problematic hydrophytic vegetation*
Herb Stratum       Plot Size (       5 ft.       Absolute % Cover       Dominant Species       Indicator Status         1       poa pratensis       80       Y       FACU         2       Solidago rugosa       30       Y       FAC         3       Trifolium pratense       25       N       FACU         4       Vernonia gigantea       10       N       FAC         5	Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is<3.0* Morphological adaptations* (provide supporting data in Remarks or on a sepa sheet) Problematic hydrophytic vegetation*
Herb Stratum       Plot Size (       5 ft.       )       Cover       Species       Status         poa pratensis       80       Y       FACU         Solidago rugosa       30       Y       FAC         Trifolium pratense       25       N       FACU         Vernonia gigantea       10       N       FAC	Dominance test is >50%     Prevalence index is≤3.0*     Morphological adaptations* (provide supporting data in Remarks or on a sepasheet)     Problematic hydrophytic vegetation*
Lower     Species     Status       1     poa pratensis     80     Y     FACU       2     Solidago rugosa     30     Y     FAC       3     Trifolium pratense     25     N     FACU       4     Vernonia gigantea     10     N     FAC       5	Prevalence index is≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a sepa sheet) Problematic hydrophytic vegetation*
2       Solidago rugosa       30       Y       FAC         3       Trifolium pratense       25       N       FACU         4       Vernonia gigantea       10       N       FAC         5	Morphological adaptations* (provide supporting data in Remarks or on a separ sheet) Problematic hydrophytic vegetation*
3     Trifolium pratense     25     N     FACU       4     Vernonia gigantea     10     N     FAC       5     10     N     FAC       6     10     10     N       7     10     10     10       8     10     10     10	supporting data in Remarks or on a separ sheet) Problematic hydrophytic vegetation*
Vernonia gigantea         10         N         FAC           5	sheet) Problematic hydrophytic vegetation*
	Problematic hydrophytic vegetation*
	*Indicators of hydric soil and wetland hydrology must
	present, unless disturbed or problematic
	Definitions of Vegetation Strata:
	Tree - Woody plants 3 in. (7.6 cm) or more in diameter
2	at breast height (DBH), regardless of height.
	Sapling/shrub - Woody plants less than 3 in. DBH ar greater than 3.28 ft (1 m) tall.
145 = Total Cover	Herb - All herbaceous (non-woody) plants, regardless
	size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum         Plot Size (30 ft.)         Absolute %         Dominant         Indicator	Woody vines - All woody vines greater than 3.28 ft ir
	height.
2	
4	Hydrophytic
5 0 = Total Cover	vegetation present? N

Depth	Matrix			dox Fea			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10 YR 4/1	100					Silt loam	
Turney O. O	an agentes flags D	Derstart		al Martai				1
	oncentration, D: PL=Pore Lining,		,	u iviatrix	, US=C0	vered or	Coated Sand Grains	
		ivi=iviati	IX					
iyaric Sol	Indicators:		Dark Si	urface (S	27)		indicators to	r Problematic Hydric Soils:
Histisol	(A1)				w Surfac	e (S8)	2 cm Muc	ck (A10) ( <b>MLRA 147)</b>
	pipedon (A2)		,	147, 14		- ()		airie Redox (A16) <b>(MLRA 147, 148</b> )
Black H	listic (A3)		Thin Da	ark Surfa	áce (S9)		Piedmont	Floodplain Soils (F19
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 1	36, 147)
	d Layers (A5)				Matrix (F	2		llow Dark Surface (TF12
	uck (A10) (LRR			d Matrix	<b>v</b> - <i>i</i>		Other (Ex	plain in Remarks
	d Below Dark S	•			rface (F6			
	ark Surface (A1	'			Surface	. ,		
	Mucky Mineral ( , <b>MLRA 147, 14</b>	,			sions (F8		LRR N, MLRA 136)	
	Gleyed Matrix (S				e (F13) <b>(N</b>			
	Redox (S5)	, ,					MLRA 148)	
	d Matrix (S6)						A 127, 147)	
	. ,							
Indicators	of hydrophytic v	egetatior	n and wetland hy	drology	must be	present	, unless disturbed or p	roblem
						1		
Postrictivo	Layer (if observe	ad)						
vpe:		<i>su)</i>					Hydric soil pres	sent? N
Depth (inch	es):				-		inguite sen pree	<u> </u>
• •	,				-			
Remarks:								

Project/Site: Holloway-Knox 138 kV Trar	nsmission Line City/County: Harri	son Report Name <u>Upland PB-16,17</u> Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy	State: Ohio	
Investigator(s) M. Thomayer, T.Qualio; Jac		nship, Range S 24 T 11N R 5W
Landform (hillslope, terrace, etc.) hillslop		
Subregion (LRR or MLRA): LRR N	Lat.: 40.37551503	Long.: -81.05299632 Datum: NAD 83
Soil Map Unit Name CnD - Coshocton silt lo		NWI Classification: N/A
Are climatic/hydrologic conditions of the site	typical for this time of the yea Yea	
	r hydrology significantly distu	
Are vegetatior, soil, or	r hydrology naturally problem	natic: present? (If needed, explain any answers in remarks
SUMMARY OF FINDINGS		
Hydrophytic vegetation present' No		
Hydric soil present? No	Is the sampled a	area within a wetland? No
Wetland hydrology present? No	_	
Remarks:	I	
Upland data point adjacent to Wetla	and PB-16 and PB-17, within main	ntained ROW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requir	red; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes	No X Depth (inches):	Wetland
Water table present? Yes	No X Depth (inches):	hydrology
Saturation present? Yes	No X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, mon	nitoring well, aerial photos, previous ins	pections), if availa
Demonton		
Remarks:		
1		

							Sampling Point: 50/20 Thresholds	u mat u	001 10 00
				Absolute %	Dominant	Indicator		20%	50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0	0
				0010	openiee	elalae	Sapling/Shrub Stratum	0	0
							Herb Stratum	25	63
				,			Woody Vine Stratum	25	0
							woody vine Stratum	0	0
			·				Dominance Test Workshee	ət	
				,			Number of Dominant		
							Species that are OBL,		
				,			FACW, or FAC:	2	(A)
				,			Total Number of Dominant	_	
							Species Across all Strata:	3	(B)
				0 =	Total Cover		· · ·	0	(2)
							Percent of Dominant		
Conling/Chrub				Abaaluta 9/	Dominant	Indiactor	Species that are OBL,	CC C7	
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute %	Dominant	Indicator	FACW, or FAC:	66.67	<u>%</u> (A/E
Stratum				Cover	Species	Status			
							Prevalence Index Workshe	et	
							Total % Cover of:		
							OBL species 0 x 1	= (	C
							FACW species 0 x 2	=	C
							FAC species 85 x 3	= 2	55
							FACU species 40 x 4	= 10	60
							UPL species 0 x 5	= (	)
							Column totals 125 (A)	4	15 (B)
							Prevalence Index = B/A =	3.32	
				0 =	Total Cover				
					<b>D</b> · · ·		Hydrophytic Vegetation Inc		
Herb Stratum	Plot Size (	5 ft.	)	Absolute %	Dominant	Indicator	Rapid test for hydrophyti		ation
				Cover	Species	Status	X Dominance test is >50%		
Solidago rugos				60	<u>Y</u>	FAC	Prevalence index is≤3.0		
Verbesina alter				25	Y	FAC	Morphological adaptation		
Apocynum can				25	Y	FACU	supporting data in Rema	irks or o	n a sepa
Rubus allegher	niensis			15	<u>N</u>	FACU	sheet)		
							Problematic hydrophytic	vegetat	ion*
							(explain)		
							*Indicators of hydric soil and wetla		logy must
							present, unless disturbed or proble	ematic	
					·		Definitions of Vegetation S	trata	
							Tree - Woody plants 3 in. (7.6 cm		in diamot
							at breast height (DBH), regardless		
							Sapling/shrub - Woody plants les	-	
							greater than 3.28 ft (1 m) tall.		
				125 =	Total Cover		Herb - All herbaceous (non-wood	v) planta	regardless
							size, and woody plants less than 3		•
Woody Vine	Plot Size (	30 ft.	)	Absolute %	Dominant	Indicator			
	1 101 0120 (	0011	,	Cover	Species	Status	Woody vines - All woody vines g	reater tha	n 3.28 ft ir
Stratum							height.		
Stratum					. <u></u>				
					<u> </u>		l hadnon beritte		
					·		Hydrophytic vegetation		
				0 -	Total Cover		nrecent? V		
			·	0 =	Total Cover		present? Y		
					<ul> <li>Total Cover</li> </ul>		present? Y		
					<ul> <li>Total Cover</li> </ul>		present? Y		
					Total Cover		present? Y		
					• Total Cover		present? Y		
					Total Cover		present? Y		
					Total Cover		present? Y		

r

Depth	Matrix		Rec	lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10 YR 4/3	100					Silt Ioam	
		•		d Matrix	, CS=Co	vered or	Coated Sand Grains	-
*Location:	PL=Pore Lining,	M=Mati	ix					
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy I Sandy O Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark Su ark Surface (A12 Mucky Mineral (S <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (# 2) 51) <b>8)</b> (4)	(MLRA Thin Da (MLRA Deplete 11 Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	ue Belov 147, 14 Irk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flooo rent Ma	w Śurfac <b>8</b> ) ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface ( Surface ( Surfa	2 (F7) s (F12) fILRA 13 iils (F19) 21)(MLR	Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 lain in Remarks
Restrictive I Гуре: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil prese	nt? <u>N</u>
Remarks:								

		Report Name Upland PB-18
Project/Site: Holloway-Knox 138 kV Transmis		
Applicant/Owner: FirstEnergy	State: Ohio	
Investigator(s) M. Thomayer, T.Qualio; Jacob		vnship, Range S 24 T 11N R 5W
Landform (hillslope, terrace, etc.) hillslope	Local relief (concave Lat.: 40.37465371	
Subregion (LRR or MLRA): LRR N Soil Map Unit Name CnD - Coshocton silt loam, 1		Long.: -81.05297605 Datum: NAD 83 NWI Classification: N/A
Are climatic/hydrologic conditions of the site typica		es X No (If no, explain in remarks
Are vegetation, soilX_, or hydro		
Are vegetation, soil, or hydro	ologynaturally problem	natic: present? (If needed, explain any answers in remarks
SUMMARY OF FINDINGS		
Hydrophytic vegetation present     No       Hydric soil present?     No       Wetland hydrology present?     No	Is the sampled	area within a wetland? <u>No</u>
Remarks:		
	B-18 and within maintained	ROW. The area has been disturbed by recent
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; cl	heck all that apply)	Surface Soil Cracks (B6)
	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
	Oxidized Rhizospheres on Living	Moss Trim Lines (B16)
	Roots (C3)	Dry-Season Water Table (C2)
	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		_
Field Observations:		
Surface water present? Yes No		Wetland
Water table present? Yes No		hydrology
Saturation present? Yes No	o X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring	g well, aerial photos, previous ins	spections), if availa
Remarks:		

						50/20 Thresholds		
Trans Otrastana		00.4	, Absolute	% Dominant	Indicator		20%	50%
Free Stratum	Plot Size (	30 ft.	) Cover	Species	Status	Tree Stratum	0	0
						Sapling/Shrub Stratum	0	0
						Herb Stratum	15	38
						Woody Vine Stratum	0	0
						woody vine offatam	0	0
						Dominance Test Workshe	et	
						Number of Dominant		
						Species that are OBL,		
						FACW, or FAC:	1	(A)
						Total Number of Dominant		
						Species Across all Strata:	2	(B)
			0	= Total Cover		Percent of Dominant		
						Species that are OBL,		
Sapling/Shrub	Plot Size (	15 ft.	, Absolute	% Dominant	Indicator	FACW, or FAC:	50.00%	6 (A/E
Stratum	FIUL SIZE (	15 ft.	) Cover	Species	Status			
						Prevalence Index Worksh	eet	
						Total % Cover of:		
						OBL species 0 x 1	= 0	
						FACW species 0 x 2		
						FAC species 15 x 3		5
						FACU species 60 x 4	= 24	0
						UPL species 0 x 5		
						Column totals 75 (A)	28	5 (B)
						Prevalence Index = B/A =	3.80	
			0	= Total Cover		Hydrophytic Vegetation Ir	dicatore	
			, Absolute	% Dominant	Indicator	Rapid test for hydrophy		
Herb Stratum	Plot Size (	5 ft.	) Cover	Species	Status	Dominance test is >50%		
Poa pratensis			60	Y	FACU	Prevalence index is≤3.0		
Solidago rugosa			15	<u> </u>	FAC	Morphological adaptatio		ide
gg						supporting data in Rem		
						sheet)		
						Problematic hydrophytic	c vegetatio	on*
						(explain)	9	
						*Indicators of hydric soil and wet	land hydrold	nav must
						present, unless disturbed or prob		yy musi
						Definitions of Vegetation	Strata:	
						Tree - Woody plants 3 in. (7.6 cr	,	
			<u> </u>		. <u> </u>	at breast height (DBH), regardles	ss of height.	
						Sapling/shrub - Woody plants le	ess than 3 i	n. DBH a
						greater than 3.28 ft (1 m) tall.		
			75	= Total Cover		Herb - All herbaceous (non-woo	dy) plants, r	egardles
Woody Vice			Abaalut- (		Indicator	size, and woody plants less than	3.28 ft tall.	
Woody Vine	Plot Size (	30 ft.	) Absolute Cover		Indicator	<b></b>		
Stratum			Cover	Species	Status	Woody vines - All woody vines	greater thar	1 3.28 ft ir
						height.		
						Hydrophytic		
						vegetation		
			0	= Total Cover		present? N		
							_	
narks: (Include photo	numbers her	e or on a se	parate sheet					

Depth	epth Matrix Redox Features					Taratana	Bomarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10 YR 4/2	100					Silt loam	rock in pit
*Type: C=C	oncentration, D=	Depleti	on, RM=Reduce	d Matrix	, CS=Co	vered or	r Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mati	ix					
Hydric Soi	I Indicators:						Indicators f	or Problematic Hydric Soils:
				urface (S				
Histisol	( )				w Surfac	e (S8)		ick (A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14				rairie Redox (A16) <b>(MLRA 147, 148)</b>
	listic (A3)				ace (S9)			nt Floodplain Soils (F19
	en Sulfide (A4) ed Layers (A5)			147, 14	∙ <b>8)</b> Matrix (F	-0		136, 147) allow Dark Surface (TF12)
	uck (A10) (LRR	NI)		ed Matrix		-2		xplain in Remarks
	ed Below Dark S				rface (F6	3)		
	ark Surface (A1)	•			Surface			
	Mucky Mineral (S	'			sions (F8	• •		
,	I, MLRA 147, 14	'		•		,	LRR N, MLRA 136)	
	Gleyed Matrix (S				e (F13) <b>(N</b>			
	Redox (S5)	-,					) MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
							-	
*Indicators	of hydrophytic ve	egetatior	n and wetland hy	'drology	must be	present	t, unless disturbed or	problem
						r		
Destrictive	Lover (if cheering	a)						
	Layer (if observe Rocky	a)					Hydric soil pre	cont2 N
Depth (inch	,				-		nyunc son pre	sent? <u>N</u>
Boptil (mon					-			
Remarks:								
Disturbe	ed by recent p	ipeline	construction.					

		Report Name: Upland PB-19		
Project/Site: Holloway-Knox 138 kV Transmiss		rison Sampling Date: 6/11/2018		
Applicant/Owner: FirstEnergy	State: Ohio			
Investigator(s): <u>M. Thomayer, B.Otto Jacobs</u> Landform (hillslope, terrace, etc.): hillside	Local relief (concave	wnship, Range: <u>S 23 T 11N R 5W</u> e, convex, none convex Slope (%): 1		
Subregion (LRR or MLRA) LRR N	Local Teller (concave Lat.: 40.36391485	Long.: -81.05270745 Datum: NAD 83		
Soil Map Unit Name WnE - Westmoreland-Dekalb				
Are climatic/hydrologic conditions of the site typica	al for this time of the year Ye	es X No (If no, explain in remarks		
Are vegetation, soil, or hydrol	logysignificantly dist	urbed? Are "normal Yes		
Are vegetatior, soil, or hydrol	ogynaturally problem	matic? circumstances" present? (If needed, explain any answers in remark		
SUMMARY OF FINDINGS				
Hydrophytic vegetation present <u>No</u>				
Hydric soil present? No	Is the sampled	area within a wetland? No		
Wetland hydrology present? No				
Remarks:				
Upland point for PEM Wetland PB-19 in	routinely maintained RO	W.		
	-			
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; ch	peck all that apply)	Surface Soil Cracks (B6)		
	11.37			
	ue Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)		
	/drogen Sulfide Odor (C1)	Drainage Patterns (B10)		
	xidized Rhizospheres on Living	Moss Trim Lines (B16)		
	pots (C3)	Dry-Season Water Table (C2)		
	esence of Reduced Iron (C4)	Crayfish Burrows (C8)		
	ecent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)		
	bils (C6)	Stunted or Stressed Plants (D1)		
	nin Muck Surface (C7)	Geomorphic Position (D2)		
Inundation Visible on Aerial	ther (Explain in Remarks)	Shallow Aquitard (D3)		
Imagery (B7)		Microtopographic Relief (D4)		
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)		
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes No	X Depth (inches):	Wetland		
Water table present? Yes No	X Depth (inches):	hydrology		
Saturation present? Yes No	X Depth (inches):	present? N		
(includes capillary fringe)				
Departible reported data (atracm acuse, maritariza	well aprial photos, provinces	increations) if available:		
Describe recorded data (stream gauge, monitoring	y weir, aeriai priotos, previous			
Remarks:				

					Sampling Point:	U-bao-6/	<u>11/2018-0</u>
					50/20 Thresholds		
	20.4	Absolute %	Dominant	Indicator		20%	50%
Tree Stratum Plot Size (	30 ft. )	Cover	Species	Status	Tree Stratum	0	0
					Sapling/Shrub Stratum	6	15
				·	Herb Stratum	6 16	40
					Woody Vine Stratum	16	40 0
				·	woody vine Stratum	U	U
					Dominance Test Market	ot	
					Dominance Test Workshee	51	
					Number of Dominant		
					Species that are OBL,	~	(
					FACW, or FAC:	2	(A)
					Total Number of Dominant		
l					Species Across all Strata:	5	(B)
		0 =	<ul> <li>Total Cover</li> </ul>		Percent of Dominant		
					Species that are OBL,		
Sapling/Shrub		Absolute %	Dominant	Indicator	FACW, or FAC:	40.00%	6 (A/B)
Stratum Plot Size (	15 ft. )	Cover	Species	Status			
			•				
Rubus allegheniensis		20	<u> </u>	FACU	Prevalence Index Workshe	et	
Rhus copallinum		10	Y	FACU	Total % Cover of:		
					OBL species 0 x 1		
					FACW species 0 x 2	= 0	
					FAC species 60 x 3	= 180	
					FACU species 50 x 4	= 200	0
					UPL species 0 x 5	= 0	
					Column totals 110 (A)		0 (B)
					Prevalence Index = $B/A =$	3.45	`` ´
		30 =	<ul> <li>Total Cover</li> </ul>		1		
					Hydrophytic Vegetation In	dicators	
		Absolute %	Dominant	Indicator	Rapid test for hydrophyt		
Herb Stratum Plot Size (	5 ft. )	Cover	Species	Status	Dominance test is >50%		
Verbesina alternifolia		40	Y	FAC	Prevalence index is≤3.0		
Dichanthelium clandestinum		20	<u> </u>	FAC	Morphological adaptatio		ide
Trifolium repens		20	<u> </u>	FACU	supporting data in Rema		
		20	<u> </u>	1 700	sheet)		. a oopali
					Problematic hydrophytic	Venetatio	<u>י</u> מי
					(explain)		
				·	*Indicators of hydric soil and wetla		ogy must b
					present, unless disturbed or probl	ematic	
				·	Definition of the second	No. 1	
					Definitions of Vegetation S	strata:	
					Tree - Woody plants 3 in. (7.6 cm)		n diameter
					breast height (DBH), regardless o		
						-	- ייפח
					Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	Jouna⊓3 IN	הסה and
					greater than 3.20 It (1 III) tall.		
		80 =	Total Cover		Herb - All herbaceous (non-wood	v) nlante m	andloss
					size, and woody plants less than 3		- วิลานเธรร
Woody Vine Plot Size (	20 <del>4</del> `	Absolute %	Dominant	Indicator	orzo, and woody plants less than .	<u>د</u> ن ۱۱ tall.	
Stratum Plot Size (	30 ft. )	Cover	Species	Status	Woody vines - All woody vines g	reater than	3,28 ft in
					height.	. cator tridfi	. پ.ون it ifi
				·			
				·			
					Hydrophytic		
					vegetation		
			<ul> <li>Total Cover</li> </ul>		present? N		
		=			· · · · · · · · · · · · · · · ·	-	
						-	
	e or on a separ						
marks: (Include photo numbers here	e or on a separ						
	e or on a separ					-	
marks: (Include photo numbers here	e or on a separ						
marks: (Include photo numbers here	e or on a separ						
marks: (Include photo numbers here	e or on a separ						
marks: (Include photo numbers here	e or on a separ						

Depth	Matrix		Red	ox Fea	tures		Τe	Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**			Remarks
0-10	10YR 4/2	100					silty loa	m	
•••		•	tion, RM=Reduce	ed Matr	ix, CS=0	Covered	or Coated	Sand Grains	
	PL=Pore Lining	, ⋈=⋈a	trix						
Hydric Soi	I Indicators:						In	dicators for Pro	oblematic Hydric Soils:
Listian	(		Dark Su	`	,	( <b>-</b> -)		2 om Musik (A	10) / <b>MI DA 147)</b>
Histisol	<b>、</b>				w Surfa	ce (S8)			10) ( <b>MLRA 147)</b> Rodov (A16) <b>(ML BA 147, 148</b> )
	pipedon (A2) listic (A3)		(MLRA						Redox (A16) <b>(MLRA 147, 148</b> ) odplain Soils (F19)
	en Sulfide (A4)		(MLRA		ace (S9)	)		(MLRA 136, 1	,
	ed Layers (A5)				Matrix (	F2			Dark Surface (TF12
	uck (A10) (LRR	N)	Deplete	-				Other (Explain	
Deplete	ed Below Dark S	Surface	A11) Redox I	Dark Su	Irface (F	6)			
Thick D	ark Surface (A1	2)	Deplete	d Dark	Surface	(F7)			
•	Mucky Mineral (	,			sions (Fa				
	l, MLRA 147, 14			-				ILRA 136)	
Sandy	Gleyed Matrix (	S4)	Umbric	Surface	e (F13) <b>(</b>	MLRA 1	36, 122)		
	Redox (S5)						MIRA 1		
Strippe	d Matrix (S6)		Red Pa	rent Ma	iterial (F	21) <b>(MLR</b>	A 127, 14	7)	
	<b>.</b>								
*Indicators	of hydrophytic v	regetatio	on and wetland h	ydrolog	ly must l	be prese	nt, unless	disturbed or pro	blema
						<u> </u>			
	Layer (if observ	ed):							
I ype: Depth (inch	les).				-		пyar	ic soil present?	r <u> </u>
Deptil (illeli					-				
Remarks:						ļ			
NGINGING.									

Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Otto Jac Landform (hillslope, terrace, etc.): hillsic Subregion (LRR or MLRA) LRR N Soil Map Unit Name WnE - Westmoreland Are climatic/hydrologic conditions of the s Are vegetation , soil ,	le Local relief (concave, Lat.: 40.3576897 I-Dekalb complex, 25 to 40 percent slop	Sampling Point Upl-bao-6/11/2018-03         nship, Range:       S 23 T 11N R 5W         , convex, none       convex         Long.:       -81.05195388         Des       NWI Classification:         NVI       Classification:         N/A       X         No       (If no, explain in remarks         rbed?       Are "normal
Hydrophytic vegetation present'       No         Hydric soil present?       No         Wetland hydrology present?       No	Is the sampled a	area within a wetland? <u>No</u>
Remarks: Upland point for PEM Wetland P HYDROLOGY	B-20 in routinely maintained ROV	N.
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is rec	uired: check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)		Moss Trim Lines (B16)
	Oxidized Rhizospheres on Living	
Water Marks (B1)	Roots (C3) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2) Crayfish Burrows (C8)
Sediment Deposits (B2) Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
	Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		Wetlend
Surface water present? Yes	No X Depth (inches):	
Water table present? Yes	No X Depth (inches):	hydrology
Saturation present? Yes (includes capillary fringe)	No X Depth (inches):	present? <u>N</u>
(includes capillary minge)		
Describe recorded data (stream gauge, m	onitoring well, aerial photos, previous ir	nspections), if available:
Remarks:		

			-			Sampling Point:	001 000 0/1	1/2018
						50/20 Thresholds		
Tree Stratum	Plot Size (	30 ft.	Absolute %	Dominant	Indicator		20% 50	0%
	1 101 0126 (	00 n.	Cover	Species	Status	Tree Stratum	0 0	0
						Sapling/Shrub Stratum	0 0	0
						Herb Stratum	20 5	50
						Woody Vine Stratum	0 0	0
						Dominance Test Workshe	et	
						Number of Dominant		
						Species that are OBL,		
}						FACW, or FAC:	2	(A)
						Total Number of Dominant		(=)
						Species Across all Strata:	3	(B)
				<ul> <li>Total Cover</li> </ul>		Percent of Dominant		
						Species that are OBL,		
Sapling/Shrub	Plot Size (	15 ft.	Absolute %	Dominant	Indicator	FACW, or FAC:	66.67%	(A/B)
Stratum	FIOL SIZE (	15 11.	Cover	Species	Status			
						Prevalence Index Worksh	eet	
						Total % Cover of:		
						OBL species 0 x 1	= 0	
				. <u></u>		FACW species 0 x 2		-
5						FAC species 70 x 3		•
				. <u></u>		FACU species 30 x 4		•
,						UPL species 0 x 5		•
}						Column totals 100 (A)	330	(B)
)						Prevalence Index = B/A =	3.30	• • •
			0 =	<ul> <li>Total Cover</li> </ul>				
						Hydrophytic Vegetation In	dicators	
Herb Stratum	Plot Size (	5 ft.	) Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation	۱
	1 101 0120 (	011	/ Cover	Species	Status	X Dominance test is >50%	6	
Poa sp.			40	Y	FAC	Prevalence index is≤3.0		
2 Trifolia repens			20	Y	FACU	Morphological adaptation		
3 Verbesina alternit			20	Y	FAC	supporting data in Rem	arks or on a s	separa
Taraxacum officir	nale		10	<u>N</u>	FACU	sheet)		
5 Coronilla vaia			10	N	FAC	Problematic hydrophytic	c vegetation*	
<u> </u>						(explain)		
7						*Indicators of hydric soil and wet		must be
3						present, unless disturbed or prob	lematic	
9								
)						Definitions of Vegetation	Strata:	
ļ						Tree - Woody plants 3 in. (7.6 cm		ameter
						breast height (DBH), regardless of	of height.	
3					<u> </u>	Sapling/shrub - Woody plants le	ess than 3 in. DF	BH and
					<u> </u>	greater than 3.28 ft (1 m) tall.		
5			100 =	Total Cover				
			100			Herb - All herbaceous (non-wood		rdless o
Woody Vine			Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
Stratum	Plot Size (	30 ft.	) Absolute % Cover	Species	Status	Manada and All I I		0.4.
			Cover	opecies	Status	Woody vines - All woody vines of	preater than 3.28	:8 ft in
1 2				·	·	height.		
1								
					<u> </u>	Hydrophytic		
5						vegetation		
			0 =	<ul> <li>Total Cover</li> </ul>		present? Y	_	
						1		
emarks: (Include photo	o numbers he	re or on a s	eparate shee					
oa sp. conservativ	ely assigne	d FAC inc	licator status					
oa sp. conservativ	ely assigne	d FAC inc	licator status					
oa sp. conservativ	ely assigne	d FAC inc	licator status					

Depth	Matrix			lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		Romanio
0-16	10YR 4/3	100					silty clay loam	
	Concentration D	Doplet	Lion DM Boduo	od Motr		Covered	or Coated Sand Grains	
	PL=Pore Lining			eu mau	IX, CS=(	Jovereu	or Coaled Sand Grains	
	I Indicators:	, 101–1014					Indicators for P	roblematic Hydric Soils:
	i indicators.		Dark S	urfaco (	97)		indicators for f	oblematic Hydric Solis.
Histisol	(A1)			,	w Surfa	co (S8)	2 cm Muck (/	A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14		Je (30)	·	Redox (A16) <b>(MLRA 147, 148</b> )
	listic (A3)		`		ace (S9)			odplain Soils (F19)
Hydrog	en Sulfide (A4)			147, 14	. ,		(MLRA 136,	
	ed Layers (A5)				Matrix (	F2		Dark Surface (TF12
2 cm M	uck (A10) <b>(LRR</b>	N)	Deplete	ed Matri	x (F3)		Other (Expla	in in Remarks
	ed Below Dark S		· /		urface (F	,		
	ark Surface (A1				Surface			
•	Mucky Mineral ( I <b>, MLRA 147, 1</b> 4	,			sions (Fa		LRR N, MLRA 136)	
	Gleyed Matrix (S					MLRA 1		
	Redox (S5)	)4)					(MLRA 148)	
	d Matrix (S6)						A 127, 147)	
							~ 121, 141)	
Indicators	of hvdrophvtic v	eaetatio	on and wetland h	vdroloc	iv must l	oe prese	nt, unless disturbed or pr	oblema
	, , ,	0		, ,	,,,	•	, , , , , , , , , , , , , , , , , , , ,	
Restrictive	Layer (if observe	ed):						
Гуре:	•	,			_		Hydric soil present	? <u>N</u>
Depth (inch	ies):				_			
Remarks:								

Project/Site: Holloway-Knox 138 kV Transmission	ine City/County: Har	rison Report Name: <u>Upland PB-21</u> Sampling Date: 6/11/2018
Applicant/Owner: FirstEnergy	State: Ohi	
Investigator(s): M. Thomayer, B.Otto Jacobs		wnship, Range: S 23 T 11N R 5W
Landform (hillslope, terrace, etc.): hillside	Local relief (concav	
Subregion (LRR or MLRA) LRR N La		Long.: -81.05232966 Datum: NAD 83
Soil Map Unit Name GuD2 - Guernsey silty clay loam,	15 to 25 percent slopes,	
Are climatic/hydrologic conditions of the site typical for	-	
Are vegetation, soil, or hydrology	significantly dis	turbed? Are "normal Yes
Are vegetatior, soil, or hydrology	naturally proble	ematic? circumstances" present? (If needed, explain any answers in remark
SUMMARY OF FINDINGS		
Hydrophytic vegetation present No		
Hydric soil present? No	Is the sampled	l area within a wetland? No
Wetland hydrology present? No		
Remarks:		
		,
Upland point for PEM Wetland PB-21 in rou	itinely maintained RC	DW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil Cracks (B6)
	quatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	gen Sulfide Odor (C1)	Drainage Patterns (B10)
	ed Rhizospheres on Living	
Water Marks (B1) Roots		Dry-Season Water Table (C2)
	nce of Reduced Iron (C4)	Crayfish Burrows (C8)
	t Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (		Stunted or Stressed Plants (D1)
	luck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Other	(Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No	X Depth (inches):	Wetland
Water table present? Yes No	X Depth (inches):	hydrology
	X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring we	ll, aerial photos, previous	inspections), if available:
Demarka		
Remarks:		

						Sampling Point:	Upl-bao-6/	11/201
						50/20 Thresholds		
Tree Stratum	Plot Sizo (	30 ft. )	Absolute %	Dominant	Indicator		20% 5	0%
Tree Stratum	Plot Size (	30 ft. )	Cover	Species	Status	Tree Stratum	0	0
				•		Sapling/Shrub Stratum		0
						Herb Stratum		55
				·		Woody Vine Stratum		0
						woody vine Stratum	0	0
						Dominance Test Workshe	et	
						Number of Dominant		
				·		Species that are OBL,		
						FACW, or FAC:	1	(A)
							-	_(^)
				·	<u> </u>	Total Number of Dominant	0	
						Species Across all Strata:	2	_(B)
				Total Cover		Percent of Dominant		
						Species that are OBL,		
Sapling/Shrub	Dist Cine (	454	Absolute %	Dominant	Indicator	FACW, or FAC:	50.00%	(A/E
Stratum	Plot Size (	15 ft. )	Cover	Species	Status			
						Prevalence Index Worksh	oot	
							CCL	
				<u> </u>		Total % Cover of:		
						OBL species <u>0</u> x 1		_
						FACW species 0 x 2		_
						FAC species <u>30</u> x 3		_
						FACU species <u>30</u> x 4		_
				. <u> </u>	. <u> </u>	UPL species 50 x 5		_
						Column totals 110 (A)		_(B)
						Prevalence Index = B/A =	4.18	_
			0 =	<ul> <li>Total Cover</li> </ul>				
						Hydrophytic Vegetation I	ndicators	
Herb Stratum	Plot Size (	5 ft. )	Absolute %	Dominant	Indicator	Rapid test for hydrophy		n
		, o	Cover	Species	Status	Dominance test is >509	%	
Glycine max			50	Y	UPL	Prevalence index is≤3.	0*	
Poa sp.			30	Y	FAC	Morphological adaptation	ons* (provide	3
3 Trifolium reper	าร		20	N	FACU	supporting data in Rem	arks or on a	sepa
Taraxacum off			10	N	FACU	sheet)		•
5						Problematic hydrophyti	c vegetation	*
						(explain)	0	
7						*Indicators of hydric soil and wet	land bydrology	must
3						present, unless disturbed or prob		musti
)						present, anote detailed of pres	Jonato	
·						Definitions of Vegetation	Strata:	
						Tree - Woody plants 3 in. (7.6 cm		iamoto
						breast height (DBH), regardless		ameter
3						Sapling/shrub - Woody plants le	-	
l						greater than 3.28 ft (1 m) tall.	555 than 5 m. E	Diran
			110 =	Total Cover				
						Herb - All herbaceous (non-wood		ardless
Woody Vine			Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
Stratum	Plot Size (	30 ft. )	Cover	Species	Status	Meedu view All	areate the C	00 ft ·
Oracolli			00001	Openeo	Glaius	Woody vines - All woody vines	greater than 3.	∠ö ít in
						height.		
						Hydrophytic		
5						vegetation		
			0 =	Total Cover		present? N		
							_	
marks: (Include ph	noto numbers he	re or on a sep	arate shee			1		
N N								
VI								
oa sp. conserva	tively assigned	d FAC indic	ator status					
	aboly aboly ite							

Depth	Matrix		Rec	lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	
0-16	10YR 4/1	100					silty clay loam	
•••		•		ed Matr	ix, CS=0	Covered	or Coated Sand Gra	ains
	PL=Pore Lining	, M=Ma	trix					
Hydric Soi	Indicators:						Indicators	for Problematic Hydric Soils:
11:	( )		Dark S	•	,		O are M	
Histisol	. ,				w Surfac	ce (S8)		uck (A10) ( <b>MLRA 147)</b>
	Histic Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9							Prairie Redox (A16)(MLRA 147, 148)
	. ,				. ,			nt Floodplain Soils (F19) <b>136, 147)</b>
	Hydrogen Sulfide (A4) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix							nallow Dark Surface (TF12
	uck (A10) (LRR	N)	Deplete					Explain in Remarks
	ed Below Dark S	-			urface (F	6)		•
	ark Surface (A1		· <u>/                                    </u>		Surface	,		
Sandy	Mucky Mineral (	S1)	Redox	Depres	sions (F8	3)		
(LRR N	, MLRA 147, 14	8)	Iron-Ma	inganes	e Masse	es (F12)	LRR N, MLRA 136)	
Sandy	Gleyed Matrix (S	64)	Umbric	Surface	e (F13) <b>(</b> I	MLRA 13	86, 122)	
	Redox (S5)						(MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F	21) <b>(MLR</b>	A 127, 147)	
*Indicators	of hydrophytic v	egetatio	on and wetland h	ydrolog	jy must t	pe presei	nt, unless disturbed	or problema
	Layer (if observe	ed):						
Type: Depth (inch	~~);				-		Hydric soil pr	esent? N
Depth (Inch	es):				-			
Dama I						<u> </u>		
Remarks:								

			Report Name	Upland PB-22
Project/Site: Holloway-Knox 138 kV Transmission Lin	· ·	Harrison	Sampling Date	
Applicant/Owner: FirstEnergy	State:		Sampling Point	: Upl-mdt-6/12/2018-01
Investigator(s) M. Thomayer, B.Otto; Jacobs			nge <u>S 22 T 11N R 5</u>	
Landform (hillslope, terrace, etc.) terrace Subregion (LRR or MLRA): LRR N Lat.		ncave, convex, n	one) <u>convex</u> -81.054849	Slope (%): Datum: NAD 83
Subregion (LRR or MLRA): <u>LRR N</u> Lat. Soil Map Unit Name <u>WmE - Westmoreland-Coshocton cc</u>				
Are climatic/hydrologic conditions of the site typical for thi	s time of the yea	Yes X	_No (If no, e	explain in remarks
Are vegetation , soil , or hydrology	significantly	y disturbed?	Are "normal circum	stances" Yes
Are vegetation , soil , or hydrology	naturally pr		present?	
			(If needed, explain	any answers in remarks
SUMMARY OF FINDINGS				
Hydrophytic vegetation present No				
Hydric soil present? No	Is the sam	pled area within	n a wetland?	No
Wetland hydrology present? No				
Remarks:				
itemarks.				
Upland data point adjacent to Wetland PB-22 a	nd within mainta	ained ROW.		
HYDROLOGY				
Wetland Hydrology Indicators:		Secon	dary Indicators (minir	num of two required)
Primary Indicators (minimum of one is required; check all	that apply)		face Soil Cracks (B6)	
	uatic Plants (B14)		arsely Vegetated Con	
	n Sulfide Odor (C1)		ainage Patterns (B10)	
		—	ss Trim Lines (B16)	
	Rhizospheres on Li		· · · ·	(00)
Water Marks (B1) Roots (C	,3) e of Reduced Iron (C		v-Season Water Table ayfish Burrows (C8)	(C2)
	ron Reduction in Tille	,	turation Visible on Aer	ial Imagon (C0)
Algal Mat or Crust (B4) Soils (C6			inted or Stressed Plan	
	ck Surface (C7)		omorphic Position (D2	· · ·
	xplain in Remarks)		allow Aquitard (D3)	-)
			• • •	
Imagery (B7) Water-Stained Leaves (B9)			crotopographic Relief ( C-Neutral Test (D5)	(D4)
Aquatic Fauna (B13)				
			•	
Field Observations:			Mada and	
Surface water present? Yes No			Wetland	
Water table present? Yes No			hydrology	
Saturation present? Yes No	Depth (inches):	:	present?	<u>N</u>
(includes capillary fringe)				
Describe recorded data (stream gauge, monitoring well, a	erial photos previo	us inspections)	if availa	
Remarks:				

							Sampling Point: 50/20 Thresholds		
				Absolute %	Dominant	Indicator		20%	50%
Free Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0	0
				0010	opeoloo	elalao	Sapling/Shrub Stratum	0	0
						·	Herb Stratum	24	60
						·			
							Woody Vine Stratum	0	0
							Dominance Test Workshee	et	
							Number of Dominant		
							Species that are OBL,		
							FACW, or FAC:	0	(A)
							Total Number of Dominant		
							Species Across all Strata:	2	(B)
				=	<ul> <li>Total Cover</li> </ul>		Percent of Dominant		
							Species that are OBL,		
Sapling/Shrub	Plot Size (	15 ft.	)	Absolute %	Dominant	Indicator	FACW, or FAC:	0.00%	<u>%</u> (A/E
Stratum			,	Cover	Species	Status			
							Prevalence Index Workshe	et	
							Total % Cover of:		
							OBL species 0 x 1		
							FACW species 0 x 2		
							FAC species 0 x 3		
							FACU species 100 x 4		
							UPL species 20 x 5		
							Column totals <u>120</u> (A)		00 (B)
				<u> </u>		<u> </u>	Prevalence Index = B/A =	4.17	
				=	Total Cover				
				=			Hydrophytic Vegetation In	dicators	:
Herb Stratum	Plot Size (	5 ft.	`	Absolute %	Dominant	Indicator	Rapid test for hydrophyt		
IGD Stratum	1 101 3120 (	J II.	)	Cover	Species	Status	Dominance test is >50%		
Trifolium pratens	e			60	Y	FACU	Prevalence index is≤3.0		
Poa pratensis				40	Y	FACU	Morphological adaptatio		
Triticum aestivun	า			20	N	UPL	supporting data in Rema	arks or o	n a sepa
							sheet)		
							Problematic hydrophytic	vegetat	ion*
							(explain)	0	
		-					*Indicators of hydric soil and wetla	and hydrol	oav must
							present, unless disturbed or probl		ogy maor
							Definitions of Vegetation S	Strata:	
						·	Tree - Woody plants 3 in. (7.6 cm		
							at breast height (DBH), regardless	s of height	i.
							Sapling/shrub - Woody plants le	ss than 3	in. DBH a
							greater than 3.28 ft (1 m) tall.		
				=	<ul> <li>Total Cover</li> </ul>		Herb - All herbaceous (non-wood		•
Woody Vine				Absolute %	Dominant	Indicator	size, and woody plants less than 3	3.28 ft tall.	
Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Moody views Allowed and	root 1	n 0 00 fr i
Judium				00001	openies	Claius	Woody vines - All woody vines g height.	reater tha	11 J.20 II II
							noigin.		
							Hydrophytic		
							vegetation		
				0 =	Total Cover	·	present? N		
narks: (Include phot	o numbers he	re or on a se	epara	te sheet					
narka. (include prior									

r

	1 1	be to the				indicator	or confirm the absence	of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Rec Color (moist)	lox Feat %	ures Type*	Loc**	Texture	Remarks
0-10	10YR 4/3	95	10YR 5/8	5	C	M	Silt loam	
	oncentration, D= PL=Pore Lining,			d Matrix	, CS=Co	overed or	Coated Sand Grains	
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils:
Histic E Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Sandy I Sandy I	Aydric Soil Indicators:       Dark Surface (S7)         Histisol (A1)       Polyvalue Below Surface (S7)         Histic Epipedon (A2)       (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S8)         Hydrogen Sulfide (A4)       (MLRA 147, 148)         Stratified Layers (A5)       Loamy Gleyed Matrix         2 cm Muck (A10) (LRR N)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       Redox Dark Surface (A12)         Thick Dark Surface (A12)       Depleted Dark Surface (A12)         Sandy Mucky Mineral (S1)       Redox Depressions (I         (LRR N, MLRA 147, 148)       Iron-Manganese Mas         Sandy Gleyed Matrix (S4)       Umbric Surface (F13)         Stripped Matrix (S6)       Red Parent Material (         ndicators of hydrophytic vegetation and wetland hydrology must I						Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl (MLRA 148) A 127, 147)	w Dark Surface (TF12 ain in Remarks
Restrictive I Type: Depth (inch	_ayer (if observe es):	ed)					Hydric soil prese	nt? <u>N</u>
Remarks:						-		

Project/Site: Holloway-Knox 138 kV Tr	ansmission Ling	City/County:	Harrison	Report Name Sampling Date	Upland PB-23 6/07/2018
Applicant/Owner: FirstEnergy		State:	-		: Upl-mdt-6/12/2018-02
Investigator(s) M. Thomayer, B.Otto; Jac	oh			nge S22 T11N R5V	
Landform (hillslope, terrace, etc.) hillslo			ncave, convex,		Slope (%): 1
Subregion (LRR or MLRA): LRR N	Lat.:	40.3300034		-81.06100922	Datum: NAD 83
Soil Map Unit Name RcB-Richland silt loan	n, 2 to 6 percent s	lope		NI Classification: N/	
Are climatic/hydrologic conditions of the sit	e typical for this tir	ne of the yea	Yes X	_No (If no, e	explain in remarks
	or hydrology		y disturbed?	Are "normal circum	stances" Yes
Are vegetatior, soil,	or hydrology	naturally p	roblematic	present? (If needed, explain	any answers in remarks
SUMMARY OF FINDINGS				(	
Hydrophytic vegetation present No					
Hydric soil present? Yes	3	Is the sam	pled area with	n a wetland?	No
Wetland hydrology present? No	_				
Remarks:					
Upland data point adjacent to Wet	land PB-23 and	within mainta	ained ROW.		
HYDROLOGY					
Wetland Hydrology Indicators:					mum of two required)
Primary Indicators (minimum of one is requ	uired; check all tha	t apply)	Su	Irface Soil Cracks (B6)	
Surface Water (A1)	True Aquation	c Plants (B14)	Sp	arsely Vegetated Con	cave Surface (B8)
High Water Table (A2)	Hydrogen S	ulfide Odor (C1)	Dr	ainage Patterns (B10)	
Saturation (A3)	Oxidized Rh	izospheres on Li	ving Mo	oss Trim Lines (B16)	
Water Marks (B1)	Roots (C3)	·		y-Season Water Table	e (C2)
Sediment Deposits (B2)	Presence of	Reduced Iron (C	C4) Cr	ayfish Burrows (C8)	
Drift Deposits (B3)	Recent Iron	Reduction in Till	ed Sa	turation Visible on Aer	rial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)		St	unted or Stressed Plar	nts (D1)
Iron Deposits (B5)	Thin Muck S	Surface (C7)	G	eomorphic Position (D2	2)
Inundation Visible on Aerial	Other (Expla	ain in Remarks)	Sh	allow Aquitard (D3)	
Imagery (B7)			Mi	crotopographic Relief	(D4)
Water-Stained Leaves (B9)			FA	C-Neutral Test (D5)	
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes	No X	Depth (inches)	:	Wetland	
Water table present? Yes	No X	Depth (inches)	:	hydrology	
Saturation present? Yes	<u>No X</u>	Depth (inches)	:	present?	N
(includes capillary fringe)					
Describe recorded data (stream gauge, mo	nitoring well aeria	al photos previo	us inspections)	if availa	
Secondo recordos data (Stream gauge, m		, priotos, provid			
Remarks:					

						Sampling Point: 50/20 Thresholds	Opi-mut-0/12/20
			Absolute %	Dominant	Indicator	50/20 Thresholds	200/ 500/
Tree Stratum	Plot Size (	30 ft.	) Absolute % Cover		Status	Trans Objectives	20% 50%
			Cover	Species	Status	Tree Stratum	0 0
						Sapling/Shrub Stratum	0 0
						Herb Stratum	23 58
						Woody Vine Stratum	0 0
						Dominance Test Workshe	- 4
						Number of Dominant	el.
						Species that are OBL, FACW, or FAC:	0 (4)
							0(A)
						Total Number of Dominant	1 (B)
			0	= Total Cover		Species Across all Strata:	<u> </u>
			0			Percent of Dominant	
Conling/Chruch			Abaaluta 0/	Dominant	Indiantar	Species that are OBL,	0.000/ (4/D
Sapling/Shrub	Plot Size (	15 ft.	) Absolute %	Dominant	Indicator	FACW, or FAC:	<u>0.00%</u> (A/B
Stratum			, Cover	Species	Status		
						Prevalence Index Workshe	eet
						Total % Cover of:	
						OBL species 0 x 1	
						FACW species 0 x 2	= 0
						FAC species 10 x 3	
						FACU species 105 x 4	= 420
						UPL species 0 x 5	= 0
						Column totals 115 (A)	450 (B)
						Prevalence Index = $B/A$ =	3.91
			0	= Total Cover			
						Hydrophytic Vegetation In	
Herb Stratum	Plot Size (	5 ft.	) Absolute %	Dominant	Indicator	Rapid test for hydrophyt	
			, Cover	Species	Status	Dominance test is >50%	
Poa pratensis			70	Υ	FACU	Prevalence index is≤3.0	
Dipsacus fullon			20	N	FACU	Morphological adaptation	
Ambrosia artem			15	N	FACU	supporting data in Rema	arks or on a sepa
Verbesina alteri	nifolia		10	N	FAC	sheet)	
						Problematic hydrophytic	vegetation*
						(explain)	
						*Indicators of hydric soil and wetle	and hydrology must l
						present, unless disturbed or prob	lematic
						Definitions of Vegetation S	Strata
				<u> </u>		Tree - Woody plants 3 in. (7.6 cm	
						at breast height (DBH), regardles	
						Sapling/shrub - Woody plants le	ess than 3 in. DBH ar
				<u> </u>		greater than 3.28 ft (1 m) tall.	
			115	= Total Cover		Herb - All herbaceous (non-wood	lv) plants regardless
						size, and woody plants less than	
Woody Vine	Plot Size (	30 ft.	Absolute %	Dominant	Indicator		
Stratum		0010	Cover	Species	Status	Woody vines - All woody vines g	reater than 3.28 ft in
						height.	
				. <u> </u>			
				. <u> </u>		Hydrophytic	
						vegetation	
			0	= Total Cover		present? N	
marke: /Include sha	to numbers ha		aparate choot				
marks: (Include pho	oto numbers he	re or on a se	eparate sheet				
	oto numbers he	re or on a se		= Total Cover		-	<u>.</u>

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	cription: (Descrit	be to the	e depth needed to	o docum	nent the	indicator	or confirm the absence	of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Rec Color (moist)	dox Feat %	tures Type*	Loc**	Texture	Remarks
0-10	10YR 3/2	95	10YR 4/6	5	C	PL	Silty clay loam	
					-			
	oncentration, D= PL=Pore Lining,			d Matrix	, CS=Co	overed or	Coated Sand Grains	
	Indicators:						Indicators for I	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy I Sandy I Sandy I	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark Su ark Surface (A12 Mucky Mineral (S Mucky Mineral (S Mucky Matrix (S Redox (S5) d Matrix (S6)	urface (/ 2) 51) <b>8)</b> 4	Polyval (MLRA Thin Da (MLRA Loamy Deplete A11 X Redox Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed do Matrix Dark Su do Dark Su Depress Inganes Surface Int Flooo rent Ma	w Śurfac 8) ace (S9) 8) Matrix (F (F3) rface (F6) Surface sions (F8 e Massee (F13) (N dplain Sc terial (F2)	52 (F7) (F7) (F2) MLRA 13 MLRA 13 Dills (F19) 21)(MLR.	Coast Prairi Piedmont F (MLRA 136 Very Shallo Other (Expl LRR N, MLRA 136)	w Dark Surface (TF12 ain in Remarks
Restrictive Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil preser	nt? <u>Y</u>
Remarks:								

		Report Name Upland PB-24
Project/Site: Holloway-Knox 138 kV Transmission Lin		arrison Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy	State: O	
Investigator(s) M. Thomayer, B.Otto; Jacobs	Section, I	Township, Range S 21 T 11N R 5W
Landform (hillslope, terrace, etc.) hillslope Subregion (LRR or MLRA): LRR N Lat.		ave, convex, none) <u>convex</u> Slope (%): 1 Long.: -81.06100922 Datum: NAD 83
Soil Map Unit Name <u>RcB - Richland silt loam, 2 to 6 perce</u>		
Are climatic/hydrologic conditions of the site typical for thi	s time of the yea	Yes X No (If no, explain in remarks
Are vegetatior, soil, or hydrology	significantly di	isturbed? Are "normal circumstances" Yes
Are vegetatior , soil , or hydrology	naturally prob	
		(If needed, explain any answers in remark
SUMMARY OF FINDINGS		
Hydrophytic vegetation present' No		
Hydric soil present? No	Is the sample	ed area within a wetland? No
Wetland hydrology present? No		
Remarks:		
Upland data point adjacent to Wetland PB-24 a	nd within maintaine	ed ROW.
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil Cracks (B6)
	uatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	n Sulfide Odor (C1)	Drainage Patterns (B10)
	Rhizospheres on Living	<b>9</b>
	e of Reduced Iron (C4)	Dry-Season Water Table (C2) Crayfish Burrows (C8)
	ron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6		Stunted or Stressed Plants (D1)
	ck Surface (C7)	Geomorphic Position (D2)
	xplain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)	xplain in Konlaiko)	Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:	(Dopth (inchos);	Wetland
Field Observations: Surface water present? Yes No>		Wetland
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X	Depth (inches):	hydrology
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X         Saturation present?       Yes       No       X	Depth (inches):	
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X	Depth (inches):	hydrology
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X         Saturation present?       Yes       No       X	Depth (inches):	hydrology present? N
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X         Saturation present?       Yes       No       X         (includes capillary fringe)       Ves       Ves       Ves	Depth (inches):	hydrology present? N
Field Observations:         Surface water present?       Yes       No       Xes         Water table present?       Yes       No       Xes         Saturation present?       Yes       No       Xes         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, and the stream gauge)	Depth (inches):	hydrology present? N
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X         Saturation present?       Yes       No       X         (includes capillary fringe)       Ves       Ves       Ves	Depth (inches):	hydrology present? N
Field Observations:         Surface water present?       Yes       No       Xes         Water table present?       Yes       No       Xes         Saturation present?       Yes       No       Xes         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, and the stream gauge)	Depth (inches):	hydrology present? N
Field Observations:         Surface water present?       Yes       No       X         Water table present?       Yes       No       X         Saturation present?       Yes       No       X         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, a	Depth (inches):	hydrology present? N

				Sampling Point: Upl-mdt-6/12/20 50/20 Thresholds
	, Absolute %	Dominant	Indicator	20% 50%
Tree Stratum Plot Size ( 30 ft.	) Cover	Species	Status	Tree Stratum 0 0
	0010	opooloo	elaluo	Sapling/Shrub Stratum 0 0
				Herb Stratum 20 50
<u>.</u>				Woody Vine Stratum 0 0
				Dominance Test Worksheet
3				Number of Dominant
				Species that are OBL,
				FACW, or FAC: <u>2</u> (A)
0				Total Number of Dominant
)				Species Across all Strata: 4 (B)
	=	<ul> <li>Total Cover</li> </ul>		Percent of Dominant
Sopling/Shrub	Abacluta 9/	Dominant	Indiaator	Species that are OBL,
Sapling/Shrub Plot Size ( 15 ft.	) Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC: <u>50.00%</u> (A/E
				Prevalence Index Worksheet
				Total % Cover of:
				OBL species $0 \times 1 = 0$
- <u></u>				FACW species $0 \times 2 = 0$
				FAC species $60 \times 3 = 180$
<u> </u>				FACU species $40 \times 4 = 160$
,				UPL species $0 \times 5 = 0$
3				Column totals $100$ (A) $340$ (B)
)				Prevalence Index = $B/A = 3.40$
)				Frevalence index = D/A = -5.40
	0 =	Total Cover		
	、 Absolute %	Dominant	Indicator	Hydrophytic Vegetation Indicators:
Herb Stratum Plot Size ( 5 ft.	) Absolute % Cover	Species	Status	Rapid test for hydrophytic vegetation
Diehenthelium, elendeetinum		opecies		
Dichanthelium clandestinum	<u> </u>	<u> </u>	FAC FAC	Prevalence index is≤3.0* Morphological adaptations* (provide
2 Verbesina alternifolia		ř V		
3 Cirsium arvense	20	<u> </u>	FACU	supporting data in Remarks or on a sepa
Rubus allegheniensis	20	<u> </u>	FACU	sheet)
				Problematic hydrophytic vegetation*
5				(explain)
				*Indicators of hydric soil and wetland hydrology must
3				present, unless disturbed or problematic
)				Definitions of Vegetation Strata:
				Tree - Woody plants 3 in. (7.6 cm) or more in diameter
				at breast height (DBH), regardless of height.
3				Sapling/shrub - Woody plants less than 3 in. DBH a
				greater than 3.28 ft (1 m) tall.
	100=	<ul> <li>Total Cover</li> </ul>		Herb - All herbaceous (non-woody) plants, regardless
Woody Vine	, Absolute %	Dominant	Indicator	size, and woody plants less than 3.28 ft tall.
Stratum Plot Size ( 30 ft.	) Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in
oradam	00101	openeo	Olaldo	height.
				Hydrophytic
3				vegetation
3				
		Total Cover		present? N
3  5		Total Cover		present? <u>N</u>
		Total Cover		present? <u>N</u>
		Total Cover		present? <u>N</u>
		Total Cover		present? <u>N</u>
		Total Cover		present? <u>N</u>

Depth	Matrix			lox Fea			Texture	Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**			
0-6	10YR 3/3	100					Silty clay loam	rocks	
	oncentration, D= PL=Pore Lining,			d Matrix	, CS=Co	vered or	Coated Sand Grains		
Hvdric Soi	Indicators:						Indicators fo	r Problematic Hydric Soils:	
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy S Sandy S Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark Si lark Surface (A1) Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) 51) <b>8)</b> (4)	(MLRA Thin Da (MLRA Loamy Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F $\langle$ (F3) rface (FC Surface $\langle$ Surface $\langle$ F13) (N dplain Sc terial (F2	52 (F7) (F7) (F2) MLRA 13 MLRA 13 VIIS (F19) 21)(MLR	Coast Pra Piedmont (MLRA 1: Very Sha Other (Ex	llow Dark Surface (TF12) plain in Remarks	
	Layer (if observe ocks es): <u>6</u>	ed)			-		Hydric soil pres	sent? <u>N</u>	
i tomano.									

		Report Name Upland PB-25
Project/Site: Holloway-Knox 138 kV Transm		Aarrison Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy		Dhio Sampling Point: Upl-mdt-06122018-04
Investigator(s) M. Thomayer, B.Otto; Jacobs		Township, Range S 21 T 11N R 5W
Landform (hillslope, terrace, etc. terrace		ave, convex, none) <u>convex</u> Slope (%): Long.: -81.06160298 Datum: NAD 83
Subregion (LRR or MLRA): LRR N Soil Map Unit Name RcB - Richland silt Ioam, 2		
Are climatic/hydrologic conditions of the site typ	ical for this time of the yea	Yes X No (If no, explain in remarks
Are vegetatior , soil X , or hy	drology significantly d	listurbed? Are "normal circumstances" Yes
	drology naturally prob	
· <u> </u>		(If needed, explain any answers in remark
SUMMARY OF FINDINGS		
Hydrophytic vegetation present' No		
Hydric soil present? No	Is the sample	ed area within a wetland? No
Wetland hydrology present? No		
 Remarks:		
Remains.		
Upland data point adjacent to Wetland	PB-25 and within maintain	ed ROW
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required;	check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	_Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Livin	ng Moss Trim Lines (B16)
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
	No X Depth (inches):	Wetland
· · · · · · · · · · · · · · · · · · ·	No X Depth (inches):	hydrology
	No X Depth (inches):	present? N
(includes capillary fringe)		
Describe recorded data (stream gauge, monitor	ing well, aerial photos, previous	s inspections), if availa
Remarks:		

							50/20 Thresholds		
Tara a Otara ta ara		00.4	`	Absolute %	Dominant	Indicator		20%	50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0	0
							Sapling/Shrub Stratum	0	0
							Herb Stratum	24	60
							Woody Vine Stratum	0	0
							Dominance Test Workshee Number of Dominant	et	
							Species that are OBL,		
							FACW, or FAC:	0	(A)
							Total Number of Dominant		
							Species Across all Strata:	3	(B)
				0 =	Total Cover		Percent of Dominant		
							Species that are OBL,		
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	0.00%	<u>6</u> (A/E
					·		Prevalence Index Workshe	et	
							Total % Cover of:		
							OBL species 0 x 1	= 0	)
							FACW species 0 x 2		
							FAC species 0 x 3		)
							FACU species 120 x 4		
							UPL species 0 x 5		
							Column totals <u>120</u> (A)		80 (B)
							Prevalence Index = B/A =	4.00	
				0 =	Total Cover		Ibelaad di Versi di S	-11	
				Absolute %	Dominant	Indicator	Hydrophytic Vegetation In Rapid test for hydrophyt		
Herb Stratum	Plot Size (	5 ft.	)	Cover	Species	Status	Dominance test is >50%		allon
Trifolium pratens	<del>ç</del>			60	Y	FACU	Prevalence index is≤3.0		
Poa pratensis				30	Y	FACU	Morphological adaptatio		vide
Plantago major				30	Y	FACU	supporting data in Rema		
							sheet)		•
							Problematic hydrophytic	vegetati	on*
							(explain)		
							*Indicators of hydric soil and wetla		ogy must
							present, unless disturbed or prob	ematic	
							Definitions of Vegetation S	Strata:	
							Tree - Woody plants 3 in. (7.6 cm	) or more	in diamete
							at breast height (DBH), regardles	s of height	
			<u> </u>				Sapling/shrub - Woody plants le	ss than 3	in. DBH a
				120 =	Total Cover		greater than 3.28 ft (1 m) tall.		
				120 =			Herb - All herbaceous (non-wood size, and woody plants less than		0
Woody Vine	Plot Size (	30 ft	)	Absolute %	Dominant	Indicator	size, and woody plants less than	J.ZO IL IAII.	
Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Woody vines - All woody vines g	reater that	n 3.28 ft ir
							height.		
							Hydrophytic		
							vegetation		
				=	Total Cover		present? N	•	
narks: (Include phot	o numbers he	re or on a se	eparat	e sheet					
			1						

Depth	Matrix			dox Feat		1 - **	Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Silty day loom	grouel
0-6	10YR 5/4	100					Silty clay loam	gravel
		1			1			
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
Location:	PL=Pore Lining,	M=Mati	ix					
ydric Soi	I Indicators:			urface (S			Indicators fo	r Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) <b>(LRR</b> ed Below Dark S Dark Surface (A1 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (# 2) S1) <b>8)</b> S4	(MLRA Thin Da (MLRA Loamy Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed do Matrix Dark Su do Dark Su Depress Inganes Surface Int Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) (Face (F6) Surface Surface (F13) ( <b>N</b> dplain Sc terial (F2)	52 (F7) (F7) (F2) MLRA 13 MLRA 13 Vils (F19) 21)(MLR.	Coast Pra Piedmont (MLRA 1: Very Sha Other (Ex	llow Dark Surface (TF12 plain in Remarks
	Layer (if observe gravel les): 6	ed)			-		Hydric soil pres	sent? <u>N</u>
emarks:								
contanto.								
contanto.								
iomarko.								

							Report Name:	Wetland PB-01	
Project/Site: Holloway-	(nox 138	kV Transm	nission Line	City/County:	Harrison		Sampling Date:	5/24/2018	
Applicant/Owner: FirstEr	nergy			State:	Ohio		Sampling Point:	W-tmq-05/24/18-04	
Investigator(s): T. Qualio,	J.Freer; J	acobs		Sectio	n, Township,	Range:	S23 T12N R5W		
Landform (hillslope, terrace,	etc.):	depression	onal	Local relief (co	ncave, conve	x, none):	concave	Slope (%): 1-3	
Subregion (LRR or MLRA):	LRR N		Lat.:		0.451423 Lo		-81.04	9639 Datum: WGS 84	
Soil Map Unit Name: RgD -		ndv loam.				·	assification: N//		
	angle) ea	naj ieani,	10 10 20 p0.00			_		•	
Are climatic/hydrologic condi	tions of th	ne site typi	cal for this time	e of the year?	Yes	X No	(If no, e	explain in remarks)	
Are vegetation, s	oil	, or h	ydrology	significantl	y disturbed?	Are	normal circums	stances" Yes	
Are vegetation, s	oil	, or h	ydrology	naturally p	oblematic?	pre	sent?		
						(lf r	needed, explain a	any answers in remarks)	
SUMMARY OF FINDIN	IGS								
Hydrophytic vegetation prese	ent?	Yes							
Hydric soil present?		Yes		Is the sam	pled area wi	thin a we	tland?	/es	
Wetland hydrology present?		Yes			-				
Remarks:									
							_		
PEM wetland in routi	nely ma	intained	ROW, dep	ressional wetla	and drains	into NH	D stream.		
L									
HYDROLOGY									
Wetland Hydrology Indi	cators:				Se	condary I	ndicators (minim	um of two required)	
Primary Indicators (minimum		required:	check all that a	(vlage			Soil Cracks (B6		
X Surface Water (A1)				itic Plants (B14)		-		, icave Surface (B8)	
X High Water Table (A2)		-	-	Sulfide Odor (C1)			je Patterns (B10)		
X Saturation (A3)		-		Rhizospheres on L			rim Lines (B16)		
Water Marks (B1)			Roots (C3		.ivilig		ason Water Table	e (C2)	
Sediment Deposits (B2)		-		, of Reduced Iron (	C4)	- '	n Burrows (C8)		
Drift Deposits (B3)		-	Recent Iro	n Reduction in Til	led	Saturati	ration Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)			Soils (C6)			Stunted	ted or Stressed Plants (D1)		
Iron Deposits (B5)		-	Thin Muck	Surface (C7)	Х	Geomo	morphic Position (D2)		
Inundation Visible on A	erial	-	Other (Exp	plain in Remarks)		Shallow	low Aquitard (D3)		
Imagery (B7)		-				Microto	pographic Relief	(D4)	
Water-Stained Leaves (	B9)				Х	FAC-Ne	eutral Test (D5)		
Aquatic Fauna (B13)						_			
Field Observations:									
Surface water present?	Yes	х	No	Depth (inches):	1		Wetland		
Water table present?	Yes	X	No	Depth (inches):		-	hydrology		
Saturation present?	Yes	Х	No	Depth (inches)		-	present?	Y	
(includes capillary fringe)				_		-			
Describe recorded data (stre	am gauge	e, monitori	ng well, aerial	photos, previous i	nspections),	if availabl	e:		
Remarks:									

Size (	30 ft.		solute % Cover 0 = solute % Cover	Dominant Species	Indicator Status	50/20 Thresholds         Tree Stratum         Sapling/Shrub Stratum         Herb Stratum         Woody Vine Stratum         Dominance Test Workshee         Number of Dominant         Species that are OBL,         FACW, or FAC:         Total Number of Dominant         Species Across all Strata:         Percent of Dominant         Species that are OBL,         FACW, or FAC:         Prevalence Index Workshee         Total % Cover of:         OBL species       45 x 1	0 0 25 0 t 2 100.00%	50% 0 63 0 (A) (B)
			Cover	Species	Status	Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum Dominance Test Workshee Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	0 0 25 0 t 2 100.00%	0 0 63 0 (A) (B)
				Total Cover Dominant	Indicator	Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum Dominance Test Workshee Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	0 25 0 t 2 2 100.00%	0 63 0 (A) (B)
Size (	15 ft.	)	solute %	Dominant		Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum Dominance Test Workshee Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	0 25 0 t 2 2 100.00%	0 63 0 (A) (B)
Size (	15 ft.	)	solute %	Dominant		Herb Stratum Woody Vine Stratum Dominance Test Worksheer Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Worksheer Total % Cover of:	25 0 t 2 2 100.00%	63 0 _(A) _(B)
Size (	15 ft.	)	solute %	Dominant		Woody Vine Stratum Dominance Test Workshee Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	0 t 2 100.00%	0 _(A) _(B)
Size (	15 ft.	)	solute %	Dominant		Dominance Test Workshee           Number of Dominant           Species that are OBL,           FACW, or FAC:           Total Number of Dominant           Species Across all Strata:           Percent of Dominant           Species that are OBL,           FACW, or FAC:           Percent of Dominant           Species that are OBL,           FACW, or FAC:           Prevalence Index Workshee           Total % Cover of:	t 2 100.00%	_(A) _(B)
Size (	15 ft.	)	solute %	Dominant		Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: <b>Prevalence Index Workshee</b> Total % Cover of:	2 2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: <b>Prevalence Index Workshee</b> Total % Cover of:	2 2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	2 100.00%	(B)
Size (	15 ft.	)	solute %	Dominant		Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	100.00%	_ ` `
Size (	15 ft.	)	solute %	Dominant		Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	100.00%	_ ` `
Size (	15 ft.	)	solute %	Dominant		Percent of Dominant Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	100.00%	_ ` `
Size (	15 ft.	)	solute %	Dominant		Species that are OBL, FACW, or FAC: Prevalence Index Workshee Total % Cover of:	et	_(A/I
Size (	15 ft.	)				FACW, or FAC: Prevalence Index Workshee Total % Cover of:	et	_(A/I
Size (	15 ft.	)				Prevalence Index Workshee Total % Cover of:	et	_(A/I
	15 п.	) 	Cover	Species	Status	Total % Cover of:		_
						Total % Cover of:		
						Total % Cover of:		
							= 45	
						OBL species 45 x 1	= 45	
						· · · · · · · · · · · · · · · · · · ·		
						FACW species 60 x 2	= 120	_
								_
						FAC species 20 x 3		_
						FACU species 0 x 4		
						UPL species 0 x 5		
						Column totals 125 (A)		(B)
						Prevalence Index = B/A =	1.80	_
			0 =	Total Cover				
			-			I had a second a Manual at land at		
						Hydrophytic Vegetation Ind	licators:	
0: (	- 4	, Ab	solute %	Dominant	Indicator	X Rapid test for hydrophytic	c vegetation	
Size (	5π.	)	Cover	Species	Status	X Dominance test is >50%		
			45	V	EACW/			
						Morphological adaptation	ns* (provide	
							rks or on a s	separ
						sheet)		
			10	N	OBL			
						Problematic hydrophytic	vegetation*	(expl
						*Indicators of hydric soil and wet	and hydrology	/ must
								mus
						Definitions of Vegetation S	trata:	
								namet
					·	breast neight (DBH), regardless o	u neight.	
							ss than 3 in. [	DBH a
			125 -	Total Cover		greater than 3.28 ft (1 m) tall.		
								ardles
0: (	00.4	, Ab	solute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
SIZE (	30 II.			Species	Status	Woody vines All woody vines	reater than 2	28 4
							noator tildii 3.	20 IL I
						Hydrophytic		
						vegetation		
			0 =	Total Cover		_		
							-	
ers here o	or on a sepa	arate shee	t)					
	Size (	Size ( 30 ft.	Size ( 5 ft. )	Size ( 5 ft. ) Cover 45 35 20 15 10 	Size ( 5 ft. )       Cover       Species         45       Y         35       Y         20       N         15       N         10       N         1125       = Total Cover         Species	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Size (       5 ft.       Cover       Species       Status         45       Y       FACW         35       Y       OBL         20       N       FAC         15       N       FACW         10       N       OBL         10       N       OBL         10       N       OBL         Problematic hydrophytic       "Indicators of hydric soil and well present, unless disturbed or problematic hydrophytic         125       Total Cover         125       Total Cover         125       Total Cover         0       Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless 0         Size (       30 ft.         0       Total Cover         0       Total Cover	Size (       5 ft.       Cover       Species       Status         45       Y       FACW         35       Y       OBL         20       N       FAC         10       N       FACW         10       N       OBL         Problematic hydrophytic vegetation*       "Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic         Image: Size (       30 ft.       Absolute %         Size (       30 ft.       Absolute %       Dominant Cover         Image: Size (       30 ft.       Absolute %       Dominant Cover         Image: Size (       30 ft.       O       Total Cover         Image: Size (       30 ft.       O       Total Cover         Image: Size (       30 ft.       O       Total Cover         Image: Size (       30 ft.       Total Cover       Image: Size (         Image: Size (       30 ft.       Total Cover       Image: Size (         Image: Size (       30 ft.

Depth	Matrix		Re	dox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Toxidio	
0-12	10 YR 4/2	75	10 YR 4/6	25	С	М	loam sand	
	oncentration, D=D PL=Pore Lining, N		RM=Reduced M	latrix, CS	S=Covere	ed or Coa	ted Sand Grains	
	Indicators:						Indicators fo	r Problematic Hydric Soils:
			Dark Su	urface (S	7)			
Histisol					Surface	(S8) ( <b>ML</b>		ck (A10) ( <b>MLRA 147)</b>
_	pipedon (A2)		147, 14	•				airie Redox (A16) <b>(MLRA 147, 148</b> )
_	istic (A3) en Sulfide (A4)			rk Surfac 147, 148	. ,		Piedmon (MLRA 1	t Floodplain Soils (F19)
	d Layers (A5)			Gleyed N	•	2)		llow Dark Surface (TF12)
	uck (A10) <b>(LRR N</b>	I)		d Matrix		,		kplain in Remarks)
	d Below Dark Sur	-	·	Dark Sur	. ,			
	ark Surface (A12)			d Dark S		-7)		
	/lucky Mineral (S1 , <b>MLRA 147, 148</b> )	,		Depressi nganese	. ,	(F12) (I	RR N, MLRA 136)	
	Gleyed Matrix (S4			-		LRA 136		
	Redox (S5)	/					MLRA 148)	
	Matrix (S6)			•		. , .	127, 147)	
_			_					
Indicators of	of hydrophytic veg	etation a	nd wetland hydro	ology mu	st be pre	sent, unle	ess disturbed or proble	matic
estrictive L	ayer (if observed	):						
ype:		_			-		Hydric soil pre	sent? Y
epth (inche	es):				-			
emarks:								

			Report Name:	Wetland PB-02	
Project/Site: Holloway-Knox 138 kV Transmission Line	City/County:	Harrison	Sampling Date:	5/24/2018	
Applicant/Owner: FirstEnergy	State:	Ohio	Sampling Point:	W-tmq-05/24/18-03	
Investigator(s): T. Qualio, J.Freer; Jacobs	Section	n, Township, Range:	S23 T12N R5W		
Landform (hillslope, terrace, etc.): depressional	Local relief (cor	ncave, convex, none):	concave	Slope (%): 1-3	
Subregion (LRR or MLRA): LRR N Lat	: 4	0.448444 Long.:	-81.04	9571 Datum: WGS 84	
Soil Map Unit Name: Or - Orrville silt loam, 0 to 3 percent s	lopes, occasionally fle	oded NWI C	lassification: N/A	4	
Are climatic/hydrologic conditions of the site typical for this ti	mo of the year?	Yes X No	(If no. c	explain in remarks)	
	-		(1110, 6		
Are vegetation, soil, or hydrology			e "normal circums	tances" Yes	
Are vegetation, soil, or hydrology	naturally pr	-	esent?		
		(If	needed, explain a	iny answers in remarks)	
SUMMARY OF FINDINGS					
Ludranhutia us satatian present?					
Hydrophytic vegetation present? Yes Hydric soil present? Yes	Is the sam	pled area within a w	etland?	/es	
Wetland hydrology present? Yes	is the sum				
Remarks:					
			-		
PEM wetland in routinely maintained ROW, de	epressional wetla	nd drains into NH	D stream.		
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary	Indicators (minim	um of two required)	
Primary Indicators (minimum of one is required; check all the	at apply)	Surface	e Soil Cracks (B6)		
X Surface Water (A1) True Ad	quatic Plants (B14)	X Sparse	ely Vegetated Con	cave Surface (B8)	
High Water Table (A2) Hydrog	en Sulfide Odor (C1)	Draina	ge Patterns (B10)		
	d Rhizospheres on L		Trim Lines (B16)		
Water Marks (B1) Roots (	-		eason Water Table (C2)		
Drift Depentite (P2)	ce of Reduced Iron (0	Soturo	fish Burrows (C8) ration Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) Recent	Iron Reduction in Till	eu	ed or Stressed Plants (D1)		
	uck Surface (C7)		norphic Position (D2)		
	Explain in Remarks)		w Aquitard (D3)	_)	
Inundation Visible on AerialOther ( Imagery (B7)			pographic Relief	(D4)	
Water-Stained Leaves (B9)			eutral Test (D5)	(21)	
Aquatic Fauna (B13)			~ /		
Field Observations:		I			
Surface water present? Yes X No	Depth (inches):	1	Wetland		
· · · · · · · · · · · · · · · · · · ·	X Depth (inches):		hydrology		
Saturation present? Yes X No	Depth (inches):		present?	Υ	
(includes capillary fringe)					
Describe recorded data (stream gauge, monitoring well, aeri	al photos, previous ir	spections), if available	e:		
Demonitor					
Remarks:					
1					

	o obioritano i	annee er p	lanto			Sampling Point:	W-tmq-05/24/18
						50/20 Thresholds	
			, Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (	30 ft.	) Cover	Species	Status	Tree Christian	
			Cover	Opecies	Status	Tree Stratum	0 0
						Sapling/Shrub Stratum	0 0
2						Herb Stratum	22 55
						Woody Vine Stratum	0 0
				·		the charan	0 0
. <u> </u>						Dominance Test Workshee	t
							•
				·		Number of Dominant	
						Species that are OBL,	
						FACW, or FAC:	(A)
						Total Number of Dominant	
						Species Across all Strata:	2 (B)
			0	= Total Cover		-	
						Percent of Dominant Species	\$
						that are OBL, FACW, or	
Sapling/Shrub	Plot Size (	15 ft.	Absolute %	Dominant	Indicator	FAC:	(A/
Stratum	FIOL 5126 (	1511.	Cover	Species	Status		
						Prevalence Index Workshe	et
						Total % Cover of:	
						OBL species 10 x 1	= 10
						FACW species 100 x 2	200
						FAC species 0 x 3	
						FACU species 0 x 4	
					<u> </u>	· · · · · · · · · · · · · · · · · · ·	
						Column totals 110 (A)	
						Prevalence Index = B/A =	1.91
			0	<ul> <li>Total Cover</li> </ul>			
						Hydrophytic Vegetation Inc	dicators:
Herb Stratum	Plot Size (	5 ft.	) Absolute %	Dominant	Indicator	X Rapid test for hydrophyti	c vegetation
	1.000.000	0 10	Cover	Species	Status	X Dominance test is >50%	
Poa palustris			65	Y	FACW	X Prevalence index is ≤3.0	i*
Juncus effusus			25	Y	FACW		
	anaia		10	N		Morphological adaptation	
Vernonia noveborace	611313				FACW	supporting data in Rema	rks or on a separ
Carex lurida			10	N	OBL	sheet)	
						Problematic hydrophytic	vegetation* (expl
						*Indicators of hydric soil and wet	and hydrology mus
						present, unless disturbed or prot	
						Definitions of Vegetation S	trata:
						Tree - Woody plants 3 in. (7.6 cr	n) or more in diame
						breast height (DBH), regardless	
							-
				T-1.1.0		Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	iss than 3 in. DBH a
			110	<ul> <li>Total Cover</li> </ul>		grouter than 0.20 it (1 m) tall.	
						Herb - All herbaceous (non-woo	dy) plants, regardles
			, Absolute %	Dominant	Indicator	size, and woody plants less than	
ody Vine Stratum	Plot Size (	30 ft.	) Cover	Species	Status		
			50101	0,0000	0.0.00	Woody vines - All woody vines g	reater than 3.28 ft
						height.	
						Hydrophytic	
						vegetation	
			0	- Total Covor			
				<ul> <li>Total Cover</li> </ul>		present? Y	-
narks: (Include photo	numbers here	or on a sepa	rate sheet)				
			/				

Sampling Point: W-tmq-05/24/18-03

Depth	Matrix		Re	dox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3	10 YR 4/1	100					clay loam	saturated
3-12	10 YR 5/1	60	10 YR 5/6	40	С	М	clay loam	
	oncentration, D=E PL=Pore Lining, N		RM=Reduced M	atrix, CS	=Covere	d or Coa	ted Sand Grains	
	Indicators:						Indicators fo	or Problematic Hydric Soils:
			Dark Su	Irface (ST	7)			·····
Histisol	(A1)				•	(S8) ( <b>ML</b>	<b>.RA</b> 2 cm Mu	ck (A10) ( <b>MLRA 147)</b>
Histic E	pipedon (A2)		147, 14			()(		airie Redox (A16) <b>(MLRA 147, 148)</b>
Black H	istic (A3)		Thin Da	rk Surfac	ce (S9)		Piedmon	t Floodplain Soils (F19)
_ ` `	en Sulfide (A4)		·	147, 148		.,	`	136, 147)
	d Layers (A5) uck (A10) <b>(LRR N</b>	n	X Deplete	Gleyed N d Matrix		2)		allow Dark Surface (TF12) xplain in Remarks)
	d Below Dark Su		·	Dark Surf	. ,			
	ark Surface (A12)			d Dark S	• • •			
Sandy N	Aucky Mineral (S	1)	Redox [	Depressio	ons (F8)			
LRR N	, MLRA 147, 148	)	Iron-Ma	nganese	Masses	(F12) ( <b>L</b>	RR N, MLRA 136)	
Sandy C	Gleyed Matrix (S4	)				LRA 136		
	Redox (S5)						MLRA 148)	
Stripped	d Matrix (S6)		Red Pa	rent Mate	erial (F21		. 127, 147)	
ndicators c	of hydrophytic vec	etation a	nd wetland hydro	loav mus	t be pres	sent unle	ess disturbed or proble	matic
		jotation a		logy mac	n bo pro			
	ayer (if observed	):						
/pe: epth (inche	20):				-		Hydric soil pre	esent? Y
					-			
emarks:								

Project/Site: Holloway Knay 128 k// Transmission Lin	City/County: Car	•	Wetland PB-03
Project/Site: Holloway-Knox 138 kV Transmission Lin			
Applicant/Owner: FirstEnergy Investigator(s) M. Thomayer, T.Qualio; Jacob:	State: Ohio	vnship, Range S23 T12N R5W	: W-mdt-6/6/2018-04
Landform (hillslope, terrace, etc.) floodplain	Local relief (concave		Slope (%): 2
Subregion (LRR or MLRA): LRR N Lat.		Long.: -81.049839	Datum: NAD 83
Soil Map Unit Name Or - Orrville silt loam, 0 to 3 percent			
Are climatic/hydrologic conditions of the site typical for this	s time of the yea Ye		explain in remarks
Are vegetatior, soil, or hydrology	significantly dist		stances" Yes
Are vegetatior, soil X, or hydrology	naturally probler		any answers in remarks
SUMMARY OF FINDINGS			
Hydrophytic vegetation present Yes			
Hydric soil present? Yes	Is the sampled	area within a wetland? Y	es
Wetland hydrology present? Yes			
Remarks:			
	~		
PEM wetland in floodplain within maintained R	OW.		
			]
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minin	num of two required)
Primary Indicators (minimum of one is required; check all		Surface Soil Cracks (B6)	
Surface Water (A1) True Aqu	uatic Plants (B14)	Sparsely Vegetated Conc	cave Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	X Drainage Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Living	Moss Trim Lines (B16)	
Water Marks (B1) Roots (C		Dry-Season Water Table	(C2)
	e of Reduced Iron (C4)	Crayfish Burrows (C8)	
	ron Reduction in Tilled	Saturation Visible on Aer	
Algal Mat or Crust (B4) Soils (C6		Stunted or Stressed Plan	
Iron Deposits (B5) Thin Mu	ck Surface (C7)	X Geomorphic Position (D2	2)
Inundation Visible on AerialOther (E	xplain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		X Microtopographic Relief (	D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes No _>		Wetland	
Water table present? Yes <u>No</u>		hydrology	
Saturation present? Yes X No	Depth (inches):	6 present?	<u>Y</u>
(includes capillary fringe)			
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous in	spections), if availa	
Remarks:			
Saturated throughout, wetland receives flooding			
	a from perennial stra	am	
Saturated throughout, wettand receives hoodin	g from perennial stre	am	

	-			Sampling Point:	W-mdt-6/6/2018-04
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	
	Cover	Species	Status		0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	30 75
3				Woody Vine Stratum	0 0
4					
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
7					4 (A)
8				FACW, or FAC:	(A)
9				Total Number of Dominant	
10				Species Across all Strata:	1 (B)
	0 =	Total Cover		Percent of Dominant	
		<b>D</b> · · ·		Species that are OBL,	
Sapling/Shrub Plot Size ( 15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	(A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksho	eet
· · · · · · · · · · · · · · · · · · ·					
2				Total % Cover of:	0
3				OBL species 0 x 1	
4				FACW species 120 x 2	
5				FAC species <u>30</u> x 3	
6				FACU species 0 x 4	
7				UPL species 0 x 5	= 0
8				Column totals 150 (A)	330 (B)
9				Prevalence Index = $B/A$ =	2.20
10					
10	0 =	Total Cover			
	=	Total Cover		Hydrophytic Vegetation In	diastora
				Hydrophytic Vegetation In	
Herb Stratum Plot Size ( 5 ft. )	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	
	Cover	Species	Status	X Dominance test is >50%	, D
1 Phalaris arundinacea	100	Y	FACW	X Prevalence index is≤3.0	)*
2 Impatiens capensis	20	N	FACW	Morphological adaptation	
3 Verbesina alternifolia	20	<u> </u>	FAC	supporting data in Rem	
4 Rubus pensilvanicus	10	<u> </u>	FAC	sheet)	
	10	IN	FAC	/	
5	·			Problematic hydrophytic	vegetation"
6				(explain)	
7				*Indicators of hydric soil and wetl	and hydrology must be
8				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation	Strata:
11				-	
				Tree - Woody plants 3 in. (7.6 cn	
12				at breast height (DBH), regardles	s of height.
13				Sapling/shrub - Woody plants le	ess than 3 in, DBH and
14				greater than 3.28 ft (1 m) tall.	
15				g. sater and e.zo it (1 in) tall.	
	150 =	Total Cover		Herb - All herbaceous (non-wood	v) plants, regardless of
				size, and woody plants less than	
Woody Vine	Absolute %	Dominant	Indicator	size, and woody plants less than	5.20 it tall.
Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Woody vines - All woody vines of	reator than 2 20 ft in
	00101	Openice	Olaldo		greater than 5.20 it in
1				height.	
2					
3					
4				Hydrophytic	
5				vegetation	
	0 =	Total Cover	·	-	
	=			present? Y	-
Pomarka: (Includo photo numboro horo or or o conce	to choot			1	
Remarks: (Include photo numbers here or on a separa	ale Sheet				

Sampling Point: W-mdt-6/6/2018-04

Depth	Matrix		Red	dox Fea	tures		Te	exture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	16	xiule	Remarks
0-12	10YR 4/2	100					silt loam		
*Type: C=C	oncentration, D=	=Depleti	on. RM=Reduce	d Matrix	. CS=Co	vered or	Coated Sa	and Grains	
•••	PL=Pore Lining,	•			,				
Hydric Soi	Indicators:						In	dicators for	Problematic Hydric Soils:
	maloatoroi		Dark St	urface (S	57)				
Histisol	(A1)				w Śurfac	e (S8)		2 cm Muck	(A10) ( <b>MLRA 147)</b>
Histic E	pipedon (A2)		`	147, 14	,				ie Redox (A16)(MLRA 147, 148)
	listic (A3)				ace (S9)				loodplain Soils (F19
	en Sulfide (A4)			147, 14				_(MLRA 136	
	d Layers (A5)				Matrix (F	-2	<u> </u>		w Dark Surface (TF12)
	uck (A10) <b>(LRR</b> d Below Dark Si		Deplete		rface (F6	3)			lain in Remarks
	ark Surface (A12	· ·			Surface	,			
	Mucky Mineral (S				sions (F8	· ·			
	, MLRA 147, 14	,			· ·	,	LRR N, ML	RA 136)	
	Gleyed Matrix (S				e (F13) <b>(N</b>				
	Redox (S5)	,	Piedmo	nt Flood	dplain Sc	ils (F19)	MLRA 148		
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147	)	
*Indicators	of hydrophytic ve	egetatior	n and wetland hy	drology	must be	present	, unless dis	sturbed or pro	blem
Restrictive	Layer (if observe	ad)							
Type:							Hvdri	ic soil prese	nt? Y
Depth (inch	es):				-				····· <u>···</u>
Remarks:									

	Report Name Wetland PB-04
Project/Site: Holloway-Knox 138 kV Transmission Line City/County: Carroll	Sampling Date 6/6/2018
Applicant/Owner: FirstEnergy State: Ohio	Sampling Point: W-mdt-6/6/2018-03
Investigator(s) M. Thomayer, T.Qualio; Jacob: Section, Township, Rang	
Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, no	
	-81.049701 Datum: NAD 83 Classification: N/A
	No (If no, explain in remarks
	Are "normal circumstances" Yes
	present? (If needed, explain any answers in remarkঃ
SUMMARY OF FINDINGS	
Hydrophytic vegetation present' Yes	
Hydric soil present? Yes Is the sampled area within	a wetland? Yes
Wetland hydrology present? Yes	
Remarks:	
DEM we then the bills identify in the second state in the interval DOM	
PEM wetland on hillside within linear swale in maintained ROW.	
HYDROLOGY	
Wetland Hydrology Indicators: Seconda	ary Indicators (minimum of two required)
	ace Soil Cracks (B6)
	sely Vegetated Concave Surface (B8)
	nage Patterns (B10)
	s Trim Lines (B16)
	Season Water Table (C2)
	fish Burrows (C8)
	ration Visible on Aerial Imagery (C9)
	ted or Stressed Plants (D1)
	morphic Position (D2)
	low Aquitard (D3)
	otopographic Relief (D4)
	-Neutral Test (D5)
Aquatic Fauna (B13)	
Field Observations:	Motional
Surface water present? Yes X No Depth (inches): 1	Wetland
Water table present? Yes No X Depth (inches):	hydrology
Saturation present? Yes X No Depth (inches): 0	present? Y
(includes capillary fringe)	
I Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if	availa
Remarks:	
Saturated throughout, wetland conveys surface flow	

			oumphing i onte	W-mdt-6/6/201
			50/20 Thresholds	
Absolute %	Dominant	Indicator		20% 50%
Cover	Species	Status	Tree Stratum	0 0
			Sapling/Shrub Stratum	0 0
			Herb Stratum	23 58
			Woody Vine Stratum	0 0
			-	
				et
			Number of Dominant	
			,	2 (A)
			Species Across all Strata:	(B)
0 =	<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
			Species that are OBL,	
Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/
Cover	Species	Status		·
			Prevalence Index Worksh	eet
				= 75
			· · · · · · · · · · · · · · · · · · ·	
			Prevalence Index = $B/A$ =	1.35
0 =	<ul> <li>Total Cover</li> </ul>			
			Hydrophytic Vegetation Ir	ndicators:
Absolute %	Dominant	Indicator	X Rapid test for hydrophy	tic vegetation
Cover	Species	Status	X Dominance test is >50%	%
45	Y	OBL	X Prevalence index is≤3.0	0*
20	Y	OBL	Morphological adaptation	ons* (provide
15	N	FACW	supporting data in Rem	arks or on a sep
10	N	FACW	sheet)	
10			Problematic hydrophytic	c vegetation*
			(explain)	
5	N	FACW	*Indicators of hydric soil and wet	land hydrology mus
			present, unless disturbed or prot	olematic
			Definitions of Vegetation	Strata:
				·
			at breast height (DBH), regardles	ss of height.
			Sapling/shrub - Woody plants l	ess than 3 in. DBH
			greater than 3.28 ft (1 m) tall.	
115 -	Total Cover			
Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
Cover	Species	Status	Woody vines - All woody vines	greater than 3 28 ft
2010.			height.	groater mail 0.20 It
	<u> </u>			
			Hydrophytic	
		·	vegetation	
	Total Cover			-
	= Total Cover		vegetation	_
	= Total Cover		vegetation	
	Total Cover		vegetation	
	Total Cover		vegetation	
	Total Cover		vegetation	
	Total Cover		vegetation	
	Cover	CoverSpecies	Cover       Species       Status	Cover       Species       Status       Tree Stratum

Depth	Matrix		Red	dox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		rtomanto
0-12	10YR 4/1	80	7.5YR 3/3	20	С	М	sandy clay	
*Type: C=C	oncentration, D	=Depleti	on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mati	rix		-			
Hydric Soi	Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark S lark Surface (A1 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) 51) <b>8)</b> 54	(MLRA Thin Da (MLRA Loamy X Deplete Redox Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed ed Matrix Dark Su ed Dark Su ed Dark Su Depress anganes Surface ont Flooc rent Mat	ce (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface ions (F8) e Masse (F13) ( <b>N</b> lplain So terial (F2)	2 (F7) ) s (F12)   <b>ILRA 13</b> ills (F19) !1)( <b>MLR</b> /	Coast Prain Piedmont F (MLRA 136 Very Shallo Other (Exp	w Dark Surface (TF12 lain in Remarks
Restrictive Type: Depth (inch Remarks:	Layer (if observe es):	ed)			-		Hydric soil prese	nt? <u>Y</u>

Project/Site: Holloway-Knox 138 kV Transmission Line City/County:	Report Name Wetland PB-05
	e: <u>Ohio</u> Sampling Point: <u>W-mdt-6/6/2018-02</u>
	tion, Township, Range S23 T12N R5W (concave, convex, none) concave Slope (%): 1
Subregion (LRR or MLRA): LRR N Lat.: 40.44302	Long.: -81.049866 Datum: NAD 83
Soil Map Unit Name CpD - Coshocton silt loam, 15 to 25 percent slope	NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the yea	
	ntly disturbed? Are "normal circumstances" Yes
Are vegetatior, soil, or hydrologynaturally	/ problematic present? (If needed, explain any answers in remarks
SUMMARY OF FINDINGS	
Hydrophytic vegetation present Yes	
Hydric soil present? Yes Is the sa	ampled area within a wetland? Yes
Wetland hydrology present? Yes	
Remarks:	
PEM wetland on hillside surrounding small stream in maintair	ned ROW.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C	
X Saturation (A3) Oxidized Rhizospheres or	
Water Marks (B1) Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron	n (C4) Crayfish Burrows (C8)
	Tilled Saturation Visible on Aerial Imagery (C9)
Sediment Deposits (B2) Presence of Reduced Iron	
Sediment Deposits (B2)         Presence of Reduced Iron           Drift Deposits (B3)         Recent Iron Reduction in T	Tilled Saturation Visible on Aerial Imagery (C9)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in T         Algal Mat or Crust (B4)       Soils (C6)	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)         Geomorphic Position (D2)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in <sup>-</sup> Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks         Imagery (B7)       Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)           Stunted or Stressed Plants (D1)           Geomorphic Position (D2)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)         Geomorphic Position (D2)         s)       Shallow Aquitard (D3)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in <sup>-</sup> Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks         Imagery (B7)       Presence of Reduced Iron	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)         Geomorphic Position (D2)         shallow Aquitard (D3)         X
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)         Geomorphic Position (D2)         s)       Shallow Aquitard (D3)         X       Microtopographic Relief (D4)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Aquatic Fauna (B13)	Tilled Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) X Microtopographic Relief (D4) X FAC-Neutral Test (D5)
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Field Observations:         Surface water present?       Yes         No       X         Depth (incher         Water table present?       Yes         No       X         Depth (incher	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         s)       Shallow Aquitard (D3)         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       Wetland         hydrology
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton Reduction in Ton Deposits (B5)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       No         Field Observations:       Yes         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche Saturation present?	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         s)       Shallow Aquitard (D3)         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       Wetland         hydrology
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Field Observations:         Surface water present?       Yes         No       X         Depth (incher         Water table present?       Yes         No       X         Depth (incher	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         s)       Shallow Aquitard (D3)         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       Wetland         hydrology
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Yes         Field Observations:       No         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche (includes capillary fringe)	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton Reduction in Ton Deposits (B5)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       No         Field Observations:       Yes         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche Saturation present?	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Yes         Field Observations:       No         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche (includes capillary fringe)	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton Reduction in Ton Deposits (B5)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Yes         Field Observations:       No         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche Gaturation present?         Yes       No         X       Depth (inche Gaturation present?	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Toposits (B4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Yes         Field Observations:       No         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche (includes capillary fringe))         Describe recorded data (stream gauge, monitoring well, aerial photos, pre	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton Reduction in Ton Deposits (B5)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       Yes         Field Observations:       No         Surface water present?       Yes         Water table present?       Yes         No       X         Depth (inche (includes capillary fringe))         Describe recorded data (stream gauge, monitoring well, aerial photos, pre	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Wetland       hydrology         present?       Y
Sediment Deposits (B2)       Presence of Reduced Iron         Drift Deposits (B3)       Recent Iron Reduction in Ton Reduction in Ton Deposits (B5)         Iron Deposits (B5)       X         Inundation Visible on Aerial       Other (Explain in Remarks)         Imagery (B7)       Water-Stained Leaves (B9)         Aquatic Fauna (B13)       No       X         Field Observations:       No       X       Depth (incher Saturation present?         Yes       No       X       Depth (incher Gate Capital Ca	Tilled       Saturation Visible on Aerial Imagery (C9)         Stunted or Stressed Plants (D1)       Geomorphic Position (D2)         Shallow Aquitard (D3)       X         X       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         es):       0         Vetland       hydrology         present?       Y

		lames of j	Jian	3			Sampling Point:	W-mdt-6/6/201
							50/20 Thresholds	
Tas a Otrasticas		20.4	`	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Tree Stratum	0 0
					·		Sapling/Shrub Stratum	0 0
							Herb Stratum	26 65
							Woody Vine Stratum	0 0
								0 0
							Dominance Test Workshe	et
							Number of Dominant	
							Species that are OBL,	
							FACW, or FAC:	2 (A
							Total Number of Dominant	(/
							Species Across all Strata:	2 (B
							Species Across all Strata.	(D
				=	<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
							Species that are OBL,	
Sapling/Shrub	Plot Size (	15 ft.	`	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A
Stratum	FIUL SIZE (	15 11.	)	Cover	Species	Status		
							Prevalence Index Worksh	eet
							Total % Cover of:	
								05
						·	· · · · · · · · · · · · · · · · · · ·	
						·	FAC species 0 x 3	
							FACU species 0 x 4	
							UPL species 0 x 5	
							Column totals 130 (A)	
							Prevalence Index = B/A =	1.35
					<ul> <li>Total Cover</li> </ul>			
							Hydrophytic Vegetation I	
Herb Stratum	Plot Size (	5 ft.	)	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	
	1.010.20 (	0.11	,	Cover	Species	Status	X Dominance test is >509	
Carex vulpino	oidea			60	Y	OBL	X Prevalence index is≤3.	
Impatiens cap	pensis			25	Y	FACW	Morphological adaptation	
Carex lurida				20	N	OBL	supporting data in Rem	arks or on a sep
Onoclea sens				10	N	FACW	sheet)	
Juncus effusu				10	N	FACW	Problematic hydrophyti	c vegetation*
Symplocarpus	s foetidus			5	N	OBL	(explain)	
							*Indicators of hydric soil and wet	and hydrology mu
							present, unless disturbed or prol	
							Definitions of Vegetation	Strata:
							Tree - Woody plants 3 in. (7.6 cr	
							at breast height (DBH), regardle	,
								-
							Sapling/shrub - Woody plants I greater than 3.28 ft (1 m) tall.	
				130 =	Total Cover		groater than onzo it (1 m) tain	
				130 =			Herb - All herbaceous (non-woo	
Woody Vine				Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Weedu vizzz Aller a test	grooter they 0.00 f
Stratum				Cover	opecies	Glatus	Woody vines - All woody vines	greater than 3.28 fl
							height.	
							Hydrophytic	
							vegetation	
				0 =	Total Cover		present? Y	
								-
narks: (Include n	hoto numbers he		Anara	ato shoet			1	
narks: (include p	noto numbers he	ere or on a s	epara	ale sheet				

Sampling Point: W-mdt-6/6/2018-02

Depth	Matrix		Red	dox Fea	tures		Toyturo	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 4/1	100					sandy clay loam	
Type: C=C	oncentration, D=	Depleti	on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains	
*Location:	PL=Pore Lining,	M=Mat	rix					
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils:
				urface (S				-
Histisol	· · /				w Surfac	e (S8)		: (A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14	,			rie Redox (A16) <b>(MLRA 147, 148)</b>
	istic (A3)				ace (S9)			Floodplain Soils (F19
	en Sulfide (A4)			147, 14		-0	(MLRA 13)	b, 147) ow Dark Surface (TF12)
	d Layers (A5) uck (A10) <b>(LRR</b> I	NI)		d Matrix	Matrix (F	-2		lain in Remarks
	d Below Dark Su	,			rface (F6	3)		
	ark Surface (A12	(			Surface	,		
	Aucky Mineral (S	,			sions (F8			
	, MLRA 147, 14	,			· ·	,	LRR N, MLRA 136)	
	, Gleyed Matrix (S					ILRA 13		
	Redox (S5)						MLRA 148)	
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
Indicators of	of hydrophytic ve	egetation	n and wetland hy	drology	must be	present	, unless disturbed or pro	oblem
						1		
Restrictive I	_aver (if observe	d)						
Type:		~)					Hydric soil prese	ent? Y
Depth (inch	es):				-		<i>,</i> ,	
					-			
Remarks:								
Soil ass	umed hydric d	lue to s	strong vegetat	ive and	l hydrol	ogic ind	dicators.	

		Report Name Wetland PB-06
Project/Site: Holloway-Knox 138 kV Transmission Line		Sampling Date 6/6/2018
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: w-mdt-6/6/2018-01
Investigator(s) M. Thomayer, T.Qualio; Jacob		hip, Range S23 T12N R5W
Landform (hillslope, terrace, etc.) hillslope Subregion (LRR or MLRA): LRR N Lat.:	Local relief (concave, co 40.442307	onvex, none) <u>concave</u> Slope (%): <u>1</u> Long.: -81.050011 Datum: NAD 83
Soil Map Unit Name CpD - Coshocton silt loam, 15 to 25 p		NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this		X_No(If no, explain in remarks
Are vegetation , soil , or hydrology	significantly disturb	ed? Are "normal circumstances" Yes
Are vegetation , soil , or hydrology	naturally problemat	ic' present?
		(If needed, explain any answers in remar
SUMMARY OF FINDINGS		
Hydrophytic vegetation present Yes		
Hydric soil present? Yes	Is the sampled are	a within a wetland? Yes
Wetland hydrology present? Yes		
Remarks:		
DEM wattend on billoide likely from a coor in m	intoined DOW	
PEM wetland on hillside likely from a seep in ma	aintained ROW.	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surface Soil Cracks (B6)
	atic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	n Sulfide Odor (C1)	X Drainage Patterns (B10)
		Moss Trim Lines (B16)
	Rhizospheres on Living	Dry-Season Water Table (C2)
	of Reduced Iron (C4)	Crayfish Burrows (C8)
	on Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6		Stunted or Stressed Plants (D1)
	, k Surface (C7)	Geomorphic Position (D2)
		Shallow Aquitard (D3)
	plain in Remarks)	
Imagery (B7) Water-Stained Leaves (B9)		X Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes <u>No X</u>		Wetland
Water table present? Yes X No	Depth (inches): 5	hydrology
Saturation present? Yes X No	Depth (inches): 0	present? Y
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous inspe	ctions) if availa
seense recorded data (orean gauge, monitoring well, a		
Remarks:		
Saturated throughout, water in pit		
Saturated throughout, water in pit		

				Sampling Point:	w-mdt-6/6/2018-01
				50/20 Thresholds	
Tree Stratum Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator	30/20 11163110103	20% 50%
	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	22 55
3				Woody Vine Stratum	0 0
4					
5 6	· ·			Dominance Test Workshe Number of Dominant	et
7	· ·			Species that are OBL,	
8				FACW, or FAC:	2 (A)
				Total Number of Dominant	<u> </u>
9 10				Species Across all Strata:	2 (B)
	0 =	Total Cover		Demonst of Dominant	
				Percent of Dominant	
0 1 (0)		<b>D</b> · · ·		Species that are OBL,	
Sapling/Shrub Plot Size(15 ft.) Stratum	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	<u>100.00%</u> (A/B)
1		-		Prevalence Index Worksh	eet
2				Total % Cover of:	
3	· ·			OBL species 20 x 1	= 20
4	· ·			FACW species 90 x 2	
5			·	FAC species 0 x 3	
6				FACU species 0 x 4	
	· ·				
7				UPL species 0 x 5	
8	· ·			Column totals <u>110</u> (A)	
9				Prevalence Index = B/A =	1.82
10	· ·				
	=	Total Cover		Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
1 Imposiono cononcio		•		X Prevalence index is≤3.0	
1 Impatiens capensis	50	<u>Y</u>	FACW		
2 Onoclea sensibilis	40	Y	FACW	Morphological adaptation	
3 Carex lurida	20	N	OBL	supporting data in Rem	arks or on a separate
4				sheet)	
5				Problematic hydrophytic	vegetation*
6				(explain)	
7				*Indicators of hydric soil and wetl	and hydrology must be
8				present, unless disturbed or prob	
9					
10				Definitions of Vegetation	Strata:
11				-	
12			·	Tree - Woody plants 3 in. (7.6 cm at breast height (DBH), regardles	,
13				Sapling/shrub - Woody plants le	J.
14 15				greater than 3.28 ft (1 m) tall.	
	110 =	Total Cover	·		L) sharts "
				Herb - All herbaceous (non-wood	
Woody Vine	Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Maaduudaaa Alluusaduudaaa	
	Cover	Opecies	Olalus	Woody vines - All woody vines g	greater than 3.28 ft in
12	· ·			height.	
	· ·				
3					
4				Hydrophytic	
5				vegetation	
	=	Total Cover		present? Y	_
Remarks: (Include photo numbers here or on a separ	rate sheet				
	ומוש שווכבו				

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Depth	Matrix			dox Feat			or confirm the absence of	,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 4/2	90	10YR 3/6	10	С	М	sandy clay loam	
*Type: C=C	oncentration, D=	=Depleti	n, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mati	ix		-			
Hydric Soi	Indicators:			urface (S			Indicators for F	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy I Sandy I Sandy I	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark Si ark Surface (A1) Mucky Mineral (S <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (# 2) S1) <b>8)</b> (4)	(MLRA Thin Da (MLRA Loamy X Deplete Redox I Redox I Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed I d Matrix Dark Su d Dark S Depress inganese Surface nt Flood rent Mat	ice (S9) <b>8)</b> Matrix (F3 (F3) (F3) (F3) (F3) (F3) (F13) (Plain Sc terial (F2)	2 (F7) ) s (F12)   <b>ILRA 13</b> iils (F19) 1)( <b>MLR</b> /	Coast Prairi Piedmont FI (MLRA 136, Very Shallov Other (Expla	w Dark Surface (TF12) ain in Remarks
	Layer (if observe ock es): <u>8</u>	ed)			-		Hydric soil presen	nt? <u>Y</u>

	Report Name Wetland PB-07
Project/Site: Holloway-Knox 138 kV Transmission Line	City/County: Carroll Sampling Date 6/6/2018
Applicant/Owner: FirstEnergy	State: Ohio Sampling Point: W-mdt-6/6/2018-06
Investigator(s) M. Thomayer, T.Qualio; Jacob	Section, Township, Range S21 T12N R5W
Landform (hillslope, terrace, etc.) terrace	Local relief (concave, convex, none) concave Slope (%):
Subregion (LRR or MLRA): LRR N Lat.:	0
Soil Map Unit Name RgE - Rigley loam, 25 to 40 percent	slope NWI Classification: R4SBC
Are climatic/hydrologic conditions of the site typical for this Are vegetation, soil, or hydrology	significantly disturbed? Are "normal circumstances" Yes
Are vegetation, soil, or hydrology	naturally problematic? present? (If needed, explain any answers in remarks)
SUMMARY OF FINDINGS	
Hydrophytic vegetation present     Yes       Hydric soil present?     Yes       Wetland hydrology present?     Yes	Is the sampled area within a wetland? Yes
Remarks:	
Remarks.	
PEM wetland in valley surrounding intermittent	stream in maintained ROW/pasture.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)Surface Soil Cracks (B6)
X Surface Water (A1) True Aqu	uatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1) X Drainage Patterns (B10)
X Saturation (A3) Oxidized	Rhizospheres on Living Moss Trim Lines (B16)
Water Marks (B1) Roots (C	
	e of Reduced Iron (C4) Crayfish Burrows (C8)
	ron Reduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	S) Stunted or Stressed Plants (D1)
Iron Deposits (B5) Thin Muc	ck Surface (C7) X Geomorphic Position (D2)
	xplain in Remarks) Shallow Aquitard (D3)
Imagery (B7)	Microtopographic Relief (D4)
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)
Aquatic Fauna (B13)	
Field Observations:	Depth (inches): 1 Wetland
Surface water present? Yes X No	
Water table present? Yes No X	
Saturation present? Yes X No	Depth (inches):0 present?Y
(includes capillary fringe)	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous inspections), if availa
Remarks:	
Saturated throughout with pockets of inundation	n: periodically receives flooding
Saturated throughout with pockets of inundation	n; periodically receives flooding

							Sampling Point: 50/20 Thresholds		
Tree Stratum P	lot Size (	30 ft.	)	Absolute %	Dominant	Indicator	<b>T</b> 01 1	20%	50%
	,		,	Cover	Species	Status	Tree Stratum	0	0
							Sapling/Shrub Stratum	0	0
							Herb Stratum	20	50
							Woody Vine Stratum	0	0
							Dominance Test Workshe	et	
3							Number of Dominant		
							Species that are OBL,	2	(4)
				······	<u> </u>		FACW, or FAC:	2	(A)
)							Total Number of Dominant Species Across all Strata:	2	(B)
				0 =	Total Cover		Percent of Dominant		
O a a lia a (O b a dh					Deminent	la d'anten	Species that are OBL,	400.00	
Sapling/Shrub P Stratum	lot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	100.00	<u>)%</u> (A/B
							Prevalence Index Workshe	et	
							Total % Cover of:		
							OBL species <u>65</u> x 1		5
							FACW species 35 x 2		0
							FAC species 0 x 3		)
<u> </u>							FACU species 0 x 4		<u>)</u>
							UPL species 0 x 5		)
							Column totals 100 (A)		<u>35</u> (B)
)							Prevalence Index = B/A =	1.35	
-				0 =	Total Cover		Hydrophytic Vegetation In	dicators	
Herb Stratum P	lot Size (	E #	`	Absolute %	Dominant	Indicator	X Rapid test for hydrophyt		
	iot Size (	5 ft.	)	Cover	Species	Status	X Dominance test is >50%		
Carex lurida				30	Y	OBL	X Prevalence index is≤3.0	*	
2 Carex vulpinoidea				20	Y	OBL	Morphological adaptatio	ns* (pro	vide
3 Symplocarpus foetic	lus			15	N	OBL	supporting data in Rema	arks or o	n a separ
4 Impatiens capensis				15	N	FACW	sheet)		
Juncus effusus				10	N	FACW	Problematic hydrophytic	vegetat	ion*
Onoclea sensibilis				10	N	FACW	(explain)	-	
7							*Indicators of hydric soil and wetle	and hydro	logy must t
3							present, unless disturbed or prob		
)				<u> </u>			Definitions of Vegetation S	Strata:	
							Tree - Woody plants 3 in. (7.6 cm	) or more	in diamete
3							at breast height (DBH), regardles	s of heigh	t.
4							Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	ss than 3	in. DBH ar
				100 =	Total Cover		Herb - All herbaceous (non-wood	y) plants	regardless
Woody Vine				Absolute %	Dominant	Indicator	size, and woody plants less than		0
Stratum	lot Size (	30 ft.	)	Cover	Species	Status	Woody vines - All woody vines g	reater tha	n 3.28 ft in
2							height.		
3									
							Hydrophytic		
5					Total Course		vegetation		
				=	Total Cover		present? Y	•	
marks: (Include photo n	umbers her	re or on a s	epara	ite sheet					

Profile Desc	cription: (Descril	be to the	depth needed to	o docum	nent the	indicator	or confirm the absence	of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Rec Color (moist)	dox Feat %	ures Type*	Loc**	Texture	Remarks
0-12	10YR 4/1	80	7.5YR 3/3	20	C	M	sandy clay	mostly sand
± <b>T</b> 0.0								
21	oncentration, D= PL=Pore Lining,		,	d Matrix	, CS=Co	overed or	Coated Sand Grains	
	Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy 0 X Sandy I Stripped	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark St ark Surface (A12 Mucky Mineral (S , <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) 51) <b>8)</b> 4	Deplete Redox Iron-Ma Umbric Piedmo Red Pa	52 (F7) ) MLRA 13 MLRA 13 )ils (F19) 21)(MLR/	Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 lain in Remarks		
Type: Depth (inch	_ayer (if observe es):	ed)			-		Hydric soil prese	nt? <u>Y</u>
Remarks:								

Design (Otto) Lallower Know 439 (A) Transmission Line City/O	Report Name Wetland PB-08
Project/Site: Holloway-Knox 138 kV Transmission Line City/Ce	
Applicant/Owner: FirstEnergy Investigator(s) M. Thomayer, T.Qualio; Jacob	State: Ohio Sampling Point: W-mdt-6/6/2018-05 Section, Township, Range S21 T12N R5W
Investigator(s) M. Thomayer, T.Qualio; Jacob: Landform (hillslope, terrace, etc.) terrace Local r	elief (concave, convex, none) concave Slope (%):
Subregion (LRR or MLRA): LRR N Lat.: 40.425	
Soil Map Unit Name WnF - Westmoreland-Dekalb complex, 40 to 70	
Are climatic/hydrologic conditions of the site typical for this time of the	e yea Yes <u>X</u> No (If no, explain in remarks
Are vegetatior, soil, or hydrologysig	nificantly disturbed? Are "normal circumstances" Yes
Are vegetatior, soil, or hydrologyna	turally problematic? present?
SUMMARY OF FINDINGS	(If needed, explain any answers in remarks
Hydrophytic vegetation present Yes	
	the sampled area within a wetland? Yes
Wetland hydrology present? Yes	
Remarks:	
PEM wetland in valley surrounding ephemeral stream w	ithin maintained ROW/pasture.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
X Surface Water (A1) True Aquatic Plants	
High Water Table (A2) Hydrogen Sulfide O	
X Saturation (A3) Oxidized Rhizosphe Water Marks (B1) Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduce	
Drift Deposits (B3) Recent Iron Reducti	
Algal Mat or Crust (B4) Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5) X Thin Muck Surface (	(C7) X Geomorphic Position (D2)
Inundation Visible on Aerial Other (Explain in Re	
Imagery (B7)	X Microtopographic Relief (D4)
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)
Aquatic Fauna (B13)	
Aquatic Fauna (B13)	
Aquatic Fauna (B13) Field Observations:	(inches): 1 Wetland
Aquatic Fauna (B13) Field Observations: Surface water present? Yes <u>X</u> NoDepth	
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       Depth         Water table present?       Yes       No       X       Depth         Saturation present?       Yes       X       No       Depth	(inches):1 Wetland
Aquatic Fauna (B13)  Field Observations: Surface water present? Water table present? Yes No X Depth	(inches): Wetland (inches): hydrology
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       Depth         Water table present?       Yes       No       X       Depth         Saturation present?       Yes       X       No       Depth         (includes capillary fringe)       Ves       X       No       Depth	(inches): Wetland (inches): hydrology (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       Depth         Water table present?       Yes       No       X       Depth         Saturation present?       Yes       X       No       Depth	(inches): Wetland (inches): hydrology (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         X       No         Saturation present?       Yes         Yes       X         No       Depth         Operation present?       Yes         X       No         Depth         (includes capillary fringe)         Describe recorded data (stream gauge, monitoring well, aerial photo	(inches): Wetland (inches): hydrology (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       Depth         Water table present?       Yes       No       X       Depth         Saturation present?       Yes       X       No       Depth         (includes capillary fringe)       Ves       X       No       Depth	(inches): Wetland (inches): hydrology (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       Depth         Water table present?       Yes       X       No       X       Depth         Saturation present?       Yes       X       No       Depth         Includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photo         Remarks:	(inches): 1 Wetland (inches): 0 Present? Y (inches): 0 s, previous inspections), if availa
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes         Water table present?       Yes         No       X         Depth         Saturation present?       Yes         Yes       X         No       X         Depth         Saturation present?       Yes         Yes       X         No       Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No         Depth         Operation present?       Yes         X       No </td <td>(inches): 1 Wetland (inches): 0 Present? Y (inches): 0 s, previous inspections), if availa</td>	(inches): 1 Wetland (inches): 0 Present? Y (inches): 0 s, previous inspections), if availa

				Sampling Point:	W-mdt-6/6/2018-05
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Chroture	
	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	26 65
3				Woody Vine Stratum	0 0
4				,	
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	<b>a</b> (1)
8				FACW, or FAC:	(A)
9				Total Number of Dominant	
10				Species Across all Strata:	3 (B)
	0 =	Total Cover			、
				Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub Plot Size ( 15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	66.67% (A/B)
Stratum	Cover	Species	Status		
1		•		Brovelence Index Werkeb	t
1				Prevalence Index Worksh	50L
2				Total % Cover of:	
3				OBL species 30 x 1	= 30
4				FACW species 40 x 2	= 80
5				FAC species 0 x 3	
6				FACU species 0 x 4	
7				UPL species 0 x 5	
8				Column totals 70 (A)	
9				Prevalence Index = B/A =	1.57
10					
	0 =	<ul> <li>Total Cover</li> </ul>			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	Rapid test for hydrophy	
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
		Opecies	Status		
1 Panicum sp.	60	<u> </u>		X Prevalence index is≤3.0	
2 Carex vulpinoidea	30	Y	OBL	Morphological adaptation	
3 Impatiens capensis	30	Y	FACW	supporting data in Rem	arks or on a separate
4 Eupatorium perfoliatum	10	N	FACW	sheet)	
5				Problematic hydrophytic	vegetation*
6				(explain)	vegetation
				``` /	
7				*Indicators of hydric soil and wet	
8				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation	Strata:
11				Tree - Woody plants 3 in. (7.6 cm	
12					,
				at breast height (DBH), regardles	is or neight.
13				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
14				greater than 3.28 ft (1 m) tall.	
15					
	130 =	<ul> <li>Total Cover</li> </ul>		Herb - All herbaceous (non-wood	dv) plants, regardless of
	_			size, and woody plants less than	
Woody Vine	Absolute %	Dominant	Indicator	Sizo, and woody plants less tildi	0.20 m ton.
Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Woody vines - All woody vines	prostor than 2.29 ft in
	0010	opooloo	elalue		greater than 5.20 it in
1				height.	
2					
3					
4				Hydrophytic	
5				vegetation	
~		Total Cause		•	
	=	Total Cover		present? Y	-
				1	
Remarks: (Include photo numbers here or on a separ	ate sheet				

r

Depth	Matrix		Red	dox Feat			or confirm the absence Texture	Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-12	10YR 5/1	90	10YR 5/6	10	С	M silty clay			
*Type: C=C	Concentration, D	=Depletic	n, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains		
**Location:	PL=Pore Lining,	M=Matri	х						
Hydric Soi	I Indicators:						Indicators for	Problematic Hydric Soils:	
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) <b>(LRR</b> ed Below Dark S bark Surface (A1 Mucky Mineral (S Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface (A 2) 51) <b>8)</b> 54	Thin Da (MLRA Loamy X Deplete 11 Redox Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 Gleyed d Matrix Dark Su d Dark S Depress anganes Surface ont Flood rrent Ma	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface sions (F8 e Masse e (F13) ( <b>N</b> dplain Sc terial (F2)	6) (F7 <u>)</u> s (F12) ↓ <b>/ILRA 13</b> vils (F19) 21) <b>(MLR</b> /	Piedmont F (MLRA 136 Very Shallo Other (Expl	w Dark Surface (TF12 ain in Remarks	
Type: Depth (inch	Layer (if observe les):	ed)			-		Hydric soil prese	nt? <u>Y</u>	
Remarks:									

Project/Site:       Holloway-Knox 138 kV Transmission Line       City/County:       Carroll       Sampling Date       6/6/2018         Applicant/Owner:       FirstEnergy       State:       Ohio       Sampling Point: W-mdt-6/6/2018-08         Investigator(s)       M. Thomayer, T.Qualio; Jacob:       Section, Township, Range       S20 T12N R5W
Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none) concave Slope (%):
Subregion (LRR or MLRA): LRR N Lat.: 40.408456 Long.: -81.051824 Datum: NAD 83
Soil Map Unit Name BkE - BerkSchannery silt loam, 25 to 35 percent slope       NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the yea Yes X No (If no, explain in remarks
Are vegetatior, soil, or hydrologysignificantly disturbed? Are "normal circumstances" Yes
Are vegetation, soil, or hydrologynaturally problematic? present?
(If needed, explain any answers in remarks SUMMARY OF FINDINGS
Hydrophytic vegetation present Yes
Hydric soil present? Yes Is the sampled area within a wetland? Yes
Wetland hydrology present? Yes
Remarks:
PEM wetland in valley adjacent to intermittent stream in maintained ROW
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
X Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)     Hydrogen Sulfide Odor (C1)     X Drainage Patterns (B10)
X     Saturation (A3)       Oxidized Rhizospheres on Living     Moss Trim Lines (B16)
Water Marks (B1) Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6) Stunted or Stressed Plants (D1)
Iron Deposits (B5) X Thin Muck Surface (C7) X Geomorphic Position (D2)
Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3)
Imagery (B7) X Microtopographic Relief (D4)
Water-Stained Leaves (B9) X FAC-Neutral Test (D5)
Aquatic Fauna (B13)
Field Observations:
Surface water present? Yes X No Depth (inches): 1 Wetland
Water table present? Yes No X Depth (inches): hydrology
Saturation present? Yes X No Depth (inches): 0 present? Y
(includes capillary fringe)
Describe recorded data (stream gauge, monitoring well, parial photos, provinus inspections), if evoils
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if availa
Remarks:
Remarks:
Remarks: Saturated throughout with pockets of inundation

						Sampling Point:	W-mdt-6/6/2018-08
						50/20 Thresholds	
			Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (	30 ft. )	Cover	Species	Status	Tree Streture	
			Cover	Species	Status	Tree Stratum	0 0
1						Sapling/Shrub Stratum	0 0
2						Herb Stratum	31 78
3						Woody Vine Stratum	0 0
4							
5						Dominance Test Workshe	et
6						Number of Dominant	
7						Species that are OBL,	<b>0</b> (A)
8						FACW, or FAC:	(A)
9						Total Number of Dominant	
10						Species Across all Strata:	2 (B)
-			0 =	Total Cover			、
						Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub	Plot Size (	15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	1101 0126 (	15 n. )	Cover	Species	Status		
1						Prevalence Index Worksho	not
							eel
2						Total % Cover of:	
3						OBL species 80 x 1	
4						FACW species 75 x 2	= 150
5						FAC species 0 x 3	= 0
6						FACU species 0 x 4	
7						UPL species 0 x 5	
8						Column totals 155 (A)	
9						Prevalence Index = B/A =	1.48
10							
				<ul> <li>Total Cover</li> </ul>			
						Hydrophytic Vegetation In	dicators:
			Absolute %	Dominant	Indicator	X Rapid test for hydrophy	tic vegetation
Herb Stratum	Plot Size (	5 ft. )	Cover	Species	Status	X Dominance test is >50%	
1 Corov vulpinois				V		X Prevalence index is≤3.0	
1 Carex vulpinoid			50	<u> </u>	OBL		
2 Onoclea sensit	DIIIS		30	Y	FACW	Morphological adaptation	
3 Carex lurida			20	<u>N</u>	OBL	supporting data in Remain	arks or on a separate
4 Juncus effusus			20	Ν	FACW	sheet)	
5 Impatiens cape	ensis		15	N	FACW	Problematic hydrophytic	vegetation*
6 Eupatorium per	rfoliatum		10	N	FACW	(explain)	0
7 Symplocarpus			10	N	OBL		a a d hundrala an unsuat ha
	10011000		10			*Indicators of hydric soil and wetl	
8						present, unless disturbed or prob	lematic
9							
10						Definitions of Vegetation	Strata:
11						Tree - Woody plants 3 in. (7.6 cn	n) or more in diameter
12						at breast height (DBH), regardles	
13							-
14						Sapling/shrub - Woody plants le	ess than 3 in. DBH and
						greater than 3.28 ft (1 m) tall.	
15			155 =	Total Cover			
			100 =			Herb - All herbaceous (non-wood	dy) plants, regardless of
				<b>D</b>		size, and woody plants less than	3.28 ft tall.
Woody Vine	Plot Size (	30 ft. )	Absolute %	Dominant	Indicator		
Stratum	1 101 0120 (	00 n. )	Cover	Species	Status	Woody vines - All woody vines g	greater than 3.28 ft in
1						height.	
2						-	
2							
4						Hydrophytic	
5						vegetation	
			0 =	<ul> <li>Total Cover</li> </ul>		present? Y	
							-
Remarks: (Include ph	oto numbers her	e or on a separa	ate sheet			1	
inolado pri		a copun					

Depth	Matrix			dox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 5/1	90	10YR 5/8	10	С	М	silty clay	
*Type: C=C	oncentration, D	=Depletio	on, RM=Reduce	d Matrix	, CS=Co	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Matr	ix					
Hydric Soi	Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy 0 Sandy 0 Sandy 0 Strippe	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark S ark Surface (A1 Mucky Mineral (S MLRA 147, 14 Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) S1) <b>8)</b> S4	(MLRA Thin Da (MLRA Loamy X Deplete Redox Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed ed Matrix Dark Su ed Dark Su ed Dark Su Depress anganes Surface ont Flooc rent Mat	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface e Masse e (F13) ( <b>N</b> dplain So terial (F2)	5) (F7) ) S (F12) ⊫ MLRA 13 MLRA 13 (F19) 21)(MLR/	Coast Prain Piedmont F (MLRA 130 Very Shallo Other (Exp	ow Dark Surface (TF12) lain in Remarks
Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil prese	nt? <u>Y</u>
Remarks:								

	Report Name Wetland PB-10
	ity/County: Carroll Sampling Date 6/6/2018
Applicant/Owner: FirstEnergy	State: Ohio Sampling Point: W-mdt-6/6/2018-07
Investigator(s) M. Thomayer, T.Qualio; Jacob: Landform (hillslope, terrace, etc.) terrace L	Section, Township, Range S20 T12N R5W coal relief (concave, convex, none) concave Slope (%):
	0.40766 Long.: -81.051582 Datum: NAD 83
Soil Map Unit Name GSB - Glenford silt loam, 3 to 8 percent slo	
Are climatic/hydrologic conditions of the site typical for this time	of the yea Yes X No (If no, explain in remarks
Are vegetatior, soil, or hydrology	significantly disturbed? Are "normal circumstances" Yes
Are vegetation, soil, or hydrology	naturally problematic? present?
	(If needed, explain any answers in remarks
SUMMARY OF FINDINGS	
Hydrophytic vegetation present Yes	
Hydric soil present? Yes	Is the sampled area within a wetland? Yes
Wetland hydrology present? Yes	
Remarks:	
PEM wetland in valley between pond and intermitte	nt stream in maintained ROW
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that a	
X Surface Water (A1) True Aquatic F	Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulf	de Odor (C1) X Drainage Patterns (B10)
X Saturation (A3) Oxidized Rhize	ospheres on Living Moss Trim Lines (B16)
Water Marks (B1) X Roots (C3)	Dry-Season Water Table (C2)
	educed Iron (C4) Crayfish Burrows (C8)
,	eduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5) Thin Muck Sur	
Inundation Visible on AerialOther (Explain	
Imagery (B7)	X Microtopographic Relief (D4)
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)
Aquatic Fauna (B13)	<u></u>
Aquatic Fauna (B13) Field Observations:	
Aquatic Fauna (B13) Field Observations: Surface water present? Yes <u>X</u> No <u>D</u>	epth (inches):1 Wetland
Aquatic Fauna (B13) Field Observations: Surface water present? Yes X No D Water table present? Yes No X D	epth (inches): 1 Wetland epth (inches): hydrology
Aquatic Fauna (B13) Field Observations: Surface water present? Water table present? Saturation present? Yes X No D	epth (inches):1 Wetland
Aquatic Fauna (B13) Field Observations: Surface water present? Yes X No D Water table present? Yes No X D	epth (inches): 1 Wetland epth (inches): hydrology
Aquatic Fauna (B13) Field Observations: Surface water present? Water table present? Saturation present? Yes X No D	epth (inches): Wetland epth (inches): hydrology epth (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       D         Water table present?       Yes       No       X       D         Saturation present?       Yes       X       No       D         Includes capillary fringe)       Ves       X       No       D	epth (inches): Wetland epth (inches): hydrology epth (inches): 0 present?Y
Aquatic Fauna (B13)  Field Observations:  Surface water present? Yes X No D Water table present? Yes No X D Saturation present? Yes X No D (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well, aerial p	epth (inches): Wetland epth (inches): hydrology epth (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       X       No       D         Water table present?       Yes       No       X       D         Saturation present?       Yes       X       No       D         Includes capillary fringe)       Ves       X       No       D	epth (inches): Wetland epth (inches): hydrology epth (inches): 0 present?Y
Aquatic Fauna (B13)         Field Observations:         Surface water present?       Yes       No       D         Water table present?       Yes       No       X       D         Saturation present?       Yes       X       No       D         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial particular stream gauge)         Remarks:	epth (inches): 1 Wetland hydrology present? Y ohotos, previous inspections), if availa
Aquatic Fauna (B13)  Field Observations:  Surface water present? Yes X No D Water table present? Yes No X D Saturation present? Yes X No D (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well, aerial p	epth (inches): 1 Wetland hydrology present? Y ohotos, previous inspections), if availa

							Sampling Point: 50/20 Thresholds		
Tree Stratum	Plot Size (	30 ft.	)	Absolute %	Dominant	Indicator		20%	50%
	,		,	Cover	Species	Status	Tree Stratum	0	0
							Sapling/Shrub Stratum	0	0
							Herb Stratum	36	90
							Woody Vine Stratum	0	0
							Dominance Test Workshe	et	
							Number of Dominant		
							Species that are OBL,	2	(A)
							FACW, or FAC:	3	(A)
							Total Number of Dominant Species Across all Strata:	3	(B)
				0 =	Total Cover		Percent of Dominant		(=)
Dearline of Ohmuch					Deminent	la d'antes	Species that are OBL,	100.00	
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	100.00	<u>%</u> (A/B
							Prevalence Index Worksho	et	
							Total % Cover of:		
							OBL species 60 x 1		
							FACW species 100 x 2		0
							FAC species 0 x 3		
							FACU species 0 x 4	= 0	
							UPL species 0 x 5		
							Column totals 160 (A)	26	0 (B)
							Prevalence Index = B/A =	1.63	
				0 =	Total Cover				
				Absolute %	Dominant	Indicator	Hydrophytic Vegetation In		
Herb Stratum	Plot Size (	5 ft.	)	Cover	Species	Status	Rapid test for hydrophyt X Dominance test is >50%		tion
Imposiono cononc	ia				Y		$X$ Prevalence index is $\leq 3.0$		
Impatiens capens Carex lurida	18			60	<u> </u>	FACW			ida
Carex Iurida				30		OBL	Morphological adaptatic		
Juncus effusus				30	<u> </u>	FACW	supporting data in Rema	arks or or	a sepa
Carex vulpinoidea	2			20	<u> </u>	OBL	sheet)		
Panicum sp.				20	<u> </u>		Problematic hydrophytic	vegetatio	on^
Onoclea sensibili				10	<u>N</u>	FACW	(explain)		
Symplocarpus for	etidus			10	N	OBL	*Indicators of hydric soil and wetl		ogy must
							present, unless disturbed or prob	lematic	
							Definitions of Vegetation S	Strata:	
					·		Tree - Woody plants 3 in. (7.6 cm		
							at breast height (DBH), regardles		
							Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	55 than 5 h	і. Обп а
				180 =	Total Cover		Herb - All herbaceous (non-wood		egardles
Woody Vine			-	Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
Stratum	Plot Size (	30 ft.	)	Cover	Species	Status	Woody vines - All woody vines of	reater thar	3.28 ft in
							height.		
							Hydrophytic		
					Tatal C		vegetation		
				=	Total Cover		present? Y	-	
marks: (Include photo	o numbers he	re or on a s	separa	te sheet			1		

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Depth	Matrix		Rec	dox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-12	10YR 5/1	90	10YR 5/8	10	С	PL/M	silty clay	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	•
*Location:	PL=Pore Lining,	M=Matri	x					
Hydric Soi	Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) uck (A10) <b>(LRR</b> ed Below Dark S lark Surface (A1 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) S1) <b>8)</b> S4	Polyvali (MLRA Thin Da (MLRA Loamy X Deplete 11 Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed ad Matrix Dark Su ad Dark Su Depress Surface ont Flooc rent Mat	w Śurfac 8) Ice (S9) 8) Matrix (F (F3) Irface (F6 Surface ions (F8 e Masse (F13) (N Iplain Sc terial (F2	2 (F7) ) s (F12)   <b>/ILRA 13</b> vils (F19) 21) <b>(MLR</b> /	Coast Prain Piedmont F (MLRA 136) Very Shallo Other (Exp	w Dark Surface (TF12) lain in Remarks
Type: Depth (inch	Layer (if observe es):	ed)			-		Hydric soil prese	nt? <u>Y</u>
Development of the second								
Remarks:								
Remarks:								
Remarks:								

		Report Name Wetland PB-11
Project/Site: Holloway-Knox 138 kV Transmission L	·	
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: W-mdt-6/07/2018-03
Investigator(s) M. Thomayer, T.Qualio; Jacob		nship, Range S20 T12N R5W
Landform (hillslope, terrace, etc.) depressiona	Local relief (concave,	
Subregion (LRR or MLRA): LRR N La Soil Map Unit Name GsB - Glenford silt loam, 3 to 8 per	t.: <u>40.399676</u>	Long.: -81.051811 Datum: NAD 83 NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for t	-	
Are vegetatior, soil, or hydrology	significantly distur	
Are vegetatior, soil, or hydrology	naturally problema	
SUMMARY OF FINDINGS		(If needed, explain any answers in remarks
Hydrophytic vegetation present' Yes		
Hydric soil present? Yes	Is the sampled a	rea within a wetland? Yes
Wetland hydrology present? Yes		
Remarks:		
PEM wetland in maintained ROW/cow pastur	е.	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check a	III that apply)	Surface Soil Cracks (B6)
	quatic Plants (B14)	
	,	Sparsely Vegetated Concave Surface (B8)
	gen Sulfide Odor (C1)	X Drainage Patterns (B10)
	ed Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots		Dry-Season Water Table (C2)
	nce of Reduced Iron (C4)	Crayfish Burrows (C8)
	t Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (		Stunted or Stressed Plants (D1)
	uck Surface (C7)	X Geomorphic Position (D2)
	(Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No	X Depth (inches):	Wetland
Water table present? Yes No	X Depth (inches):	hydrology
Saturation present? Yes X No	Depth (inches): 0	D present? Y
(includes capillary fringe)		
Departies recorded data (atraces recurs, recritering or "	aarial photos, province in	ventione) if evalue
Describe recorded data (stream gauge, monitoring well,	aenai priotos, previous insp	bections), il avalla
Remarks:		
Saturated throughout with some surface flow		
I Gatalated throughout with some sundle now		
Ũ		

						Sampling Point:	W-mdt-6/07/2018-03
						50/20 Thresholds	
			Absolute %	Dominant	Indicator		200/ 500/
Tree Stratum	Plot Size (	30 ft. )				Tree Strature	20% 50%
			Cover	Species	Status	Tree Stratum	0 0
1						Sapling/Shrub Stratum	0 0
2						Herb Stratum	18 45
3						Woody Vine Stratum	0 0
4						,	
5						Dominance Test Workshe	et
6						Number of Dominant	
			·				
7						Species that are OBL,	<b>0</b> (A)
8						FACW, or FAC:	(A)
9						Total Number of Dominant	
10						Species Across all Strata:	2 (B)
			0 =	Total Cover		Demonstrat Demoissant	
						Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub	Plot Size (	15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	1 101 0120 (	1011. )	Cover	Species	Status		
1						Prevalence Index Worksh	oot
-			·				
2						Total % Cover of:	
3						OBL species 0 x 1	
4						FACW species 75 x 2	
5						FAC species 15 x 3	= 45
6						FACU species 0 x 4	= 0
7						UPL species 0 x 5	
8						Column totals 90 (A)	
9			·			Prevalence Index = $B/A =$	2.17
			·			Flevalence index = D/A =	2.17
10			·	<del></del>			
			=	Total Cover			
						Hydrophytic Vegetation In	dicators:
Herb Stratum	Plot Size (	5 ft. )	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	tic vegetation
Helb Stratum	FIOL SIZE (	5 ft. )	Cover	Species	Status	X Dominance test is >50%	6
1 Poa palustris			50	· v	FACW	X Prevalence index is≤3.0	
2 Juncus effusus			25	Y	FACW	Morphological adaptatio	
			15	N	FAC	supporting data in Rem	
3 Rumex crispus			10	IN	FAC		arks of on a separate
4						sheet)	
5						Problematic hydrophytic	c vegetation*
6						(explain)	
7						*Indicators of hydric soil and wet	and hydrology must be
8						present, unless disturbed or prob	
9						F	
10			·			Definitions of Vegetation	Strata
11						Tree - Woody plants 3 in. (7.6 cm	n) or more in diameter
12						at breast height (DBH), regardles	ss of height.
13						Sapling/shrub - Woody plants le	ase than 3 in DDU and
14							
15						greater than 3.28 ft (1 m) tall.	
			90 =	Total Cover			hu) planta rozzzilazz (
						Herb - All herbaceous (non-wood	
Woody Vine			Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
	Plot Size (	30 ft. )					
Stratum			Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft in
1						height.	
2							
3							
4						Hydrophytic	
5						vegetation	
			=	<ul> <li>Total Cover</li> </ul>		present? Y	_
Remarks: (Include phot	to numbers her	e or on a sepai	ate sheet				
		1					

Depth	Matrix			dox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 5/1	95	10YR 4/6	5	С	М	clay loam	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
	PL=Pore Lining,	M=Matr	X					
ydric Soi	Indicators:		Dork S	urface (S	27)		Indicators for	Problematic Hydric Soils:
Histisol	(A1)			· ·	w Surfac	e (S8)	2 cm Muc	k (A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14		- ()		irie Redox (A16) <b>(MLRA 147, 14</b>
	listic (A3)				ace (S9)			Floodplain Soils (F19
	en Sulfide (A4)			147, 14			(MLRA 13	
	d Layers (A5) uck (A10) <b>(LRR</b>	NI)	X Deplete		Matrix (F	2		low Dark Surface (TF12) plain in Remarks
	d Below Dark S	,			rface (F6	5)		plain in Remarks
	ark Surface (A1	· ·			Surface	,		
Sandy I	Mucky Mineral (	, S1)			ions (F8	• •		
	, MLRA 147, 14		Iron-Ma	anganes	e Masse	s (F12) l	LRR N, MLRA 136)	
	Gleyed Matrix (S	64			e (F13) <b>(N</b>			
	Redox (S5)						MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2		A 127, 147)	
ndicators	of hydrophytic ve	egetation	and wetland hy	drology	must be	present	, unless disturbed or pr	roblem
		0		0,		•	•	
		-0						
estrictive   vpe:	Layer (if observe	ea)					Hydric soil pres	ont? V
epth (inch	es):				-		Hyune son pres	
-1 - ( -					-			
emarks:								

		Report Name Wetland PB-12
Project/Site: Holloway-Knox 138 kV Transmission Line		rison Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy	State: Ohio	
Investigator(s) M. Thomayer, T.Qualio; Jacob		vnship, Range S20 T12N R5W
Landform (hillslope, terrace, etc.) hillslope	Local relief (concave	
Subregion (LRR or MLRA): LRR N Lat.:		Long.: -81.051836 Datum: NAD 83
Soil Map Unit Name CnD - Coshocton silt loam, 15 to 25 p		NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this	-	
Are vegetatior, soil, or hydrology	significantly dist	
Are vegetatior , soil , or hydrology	naturally problem	
SUMMARY OF FINDINGS		(If needed, explain any answers in remar
Hydrophytic vegetation present' Yes Hydric soil present? Yes	is the sampled	area within a wetland? Yes
	is the sumpled	
Wetland hydrology present? Yes		
Remarks:		
PEM wetland on hillside in maintained ROW/co	w pasture	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	hat apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aqu	atic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	n Sulfide Odor (C1)	X Drainage Patterns (B10)
	Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots (C		Dry-Season Water Table (C2)
	e of Reduced Iron (C4)	Crayfish Burrows (C8)
	on Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	)	Stunted or Stressed Plants (D1)
Iron Deposits (B5) X Thin Muc	k Surface (C7)	Geomorphic Position (D2)
	plain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)	1 ,	Microtopographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No X	Depth (inches):	Wetland
Water table present? Yes No X	Depth (inches):	hydrology
Saturation present? Yes X No	Depth (inches):	0 present? Y
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous ins	spections), if availa
Remarks:		
Saturated throughout with some surface flow		
3		

	-			Sampling Point:	W-mdt-6/07/2018-02
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover		Status	Tree Streture	
	Cover	Species	Status	Tree Stratum	0 0
1	. <u> </u>			Sapling/Shrub Stratum	0 0
2				Herb Stratum	21 53
3				Woody Vine Stratum	0 0
4					
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	4 (4)
8				FACW, or FAC:	(A)
9				Total Number of Dominant	
10				Species Across all Strata:	2 (B)
	0 =	Total Cover			
				Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub Plot Size ( 15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	50.00% (A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksho	oot
2				Total % Cover of:	
3				OBL species 25 x 1	
4				FACW species 40 x 2	
5				FAC species 0 x 3	= 0
6				FACU species 0 x 4	
7				UPL species 0 x 5	
8				Column totals 65 (A)	
		·			
9				Prevalence Index = B/A =	1.62
10	. <u> </u>				
	=	Total Cover			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	Dominance test is >50%	
1 Corov on		Y	Olaldo		
1 Carex sp.	40		<b>EAO</b> 14/	X Prevalence index is<3.0	
2 Juncus effusus	25	Y	FACW	Morphological adaptation	
3 Carex vulpinoidea	20	N	OBL	supporting data in Remain	arks or on a separate
4 Eupatorium perfoliatum	15	N	FACW	sheet)	
5 Scirpus atrovirens	5	N	OBL	Problematic hydrophytic	c vegetation*
6				(explain)	-
7				*Indicators of hydric soil and wetl	and hydrology must be
8	·			present, unless disturbed or prob	
9		·		present, unless disturbed or prob	lematic
					-
10	. <u> </u>			Definitions of Vegetation	Strata:
11				Tree - Woody plants 3 in. (7.6 cn	n) or more in diameter
12				at breast height (DBH), regardles	
13					_
14				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
15				greater than 3.28 ft (1 m) tall.	
	105 =	Total Cover			
				Herb - All herbaceous (non-wood	
Mandu Minn	Abaalista 0/	Demissist	المعالم حاجية	size, and woody plants less than	3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		
Stratum	Cover	Species	Status	Woody vines - All woody vines g	greater than 3.28 ft in
1				height.	
2					
3					
				Hydrophytic	
5				vegetation	
	0 =	Total Cover		present? Y	
				· · ·	-
Remarks: (Include photo numbers here or on a separa	ate sheet			•	

Depth	Matrix		-	dox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	- 114	
0-14	10YR 4/1	95	10YR 4/6	5	С	М	silty clay loam	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
	PL=Pore Lining,	M=Matr	ΊX					
ydric Soi	Indicators:		Dark Si	urface (S	27)		Indicators for	Problematic Hydric Soils:
Histisol	(A1)				w Surfac	e (S8)	2 cm Muck	(A10) ( <b>MLRA 147)</b>
	pipedon (A2)		(MLRA	147, 14	8)	· · /	Coast Prai	rie Redox (A16)(MLRA 147, 14
	listic (A3)				ace (S9)			Floodplain Soils (F19
_ / 0	en Sulfide (A4)			147, 14		-	(MLRA 13	
	d Layers (A5) uck (A10) <b>(LRR</b>	NI)	X Deplete		Matrix (F	2		ow Dark Surface (TF12) Ilain in Remarks
	ed Below Dark S				rface (F6	5)		
	ark Surface (A1	•			Surface			
Sandy	Mucky Mineral (	S1)	Redox	Depress	ions (F8	)		
	, MLRA 147, 14						LRR N, MLRA 136)	
	Gleyed Matrix (S	64			(F13) <b>(N</b>			
	Redox (S5)						MLRA 148) A 127, 147)	
_Suppe	d Matrix (S6)		Red Pa	rent Ma	tenai (F2		A 127, 147)	
ndicators	of hydrophytic v	egetatior	and wetland hy	drology	must be	present	, unless disturbed or pr	oblem
	, , ,	5	,	0,		•	, I	
vpe:	Layer (if observe	ed)					Hydric soil prese	nt2 V
ype. Depth (inch	es):				-		Hydric soli prese	
op (o.					-			
emarks:								

		Report Name Wetland PB-13
Project/Site: Holloway-Knox 138 kV Transmission Line		
Applicant/Owner: FirstEnergy	State: Ohio	
Investigator(s) M. Thomayer, T.Qualio; Jacob		Inship, Range S19 T12N R5W
Landform (hillslope, terrace, etc.) hillslope	Local relief (concave	
Subregion (LRR or MLRA): LRR N Lat.: Soil Map Unit Name CnD - Coshocton silt loam, 15 to 25 p	40.398059	Long.: -81.051966 Datum: NAD 83 NWI Classification: N/A
•		
Are climatic/hydrologic conditions of the site typical for this	-	
Are vegetatior, soil, or hydrology	significantly distu	
Are vegetation , soil , or hydrology	naturally problem	
SUMMARY OF FINDINGS		(If needed, explain any answers in remark
Hydrophytic vegetation present' Yes Hydric soil present? Yes	Is the sampled :	area within a wetland? Yes
Wetland hydrology present? Yes		
Wettand Hydrology present:		
Remarks:		
DEM watered on billoids in maintained DOW		
PEM wetland on hillside in maintained ROW.		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aqu	atic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen	Sulfide Odor (C1)	X Drainage Patterns (B10)
X Saturation (A3) Oxidized	Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots (C3		Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence	of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recent Ire	on Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6)	)	Stunted or Stressed Plants (D1)
Iron Deposits (B5) X Thin Muc	k Surface (C7)	Geomorphic Position (D2)
Inundation Visible on AerialOther (Ex	plain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No X	Depth (inches):	Wetland
Water table present? Yes No X	Depth (inches):	hydrology
Saturation present? Yes X No	Depth (inches):	0 present? Y
(includes capillary fringe)		
	whether the states of the stat	
Describe recorded data (stream gauge, monitoring well, as	erial photos, previous ins	spections), if availa
Remarks:		
Saturated throughout with some surface flow		
Gatarated infoughout with some sunace now		

						Sampling Point: 50/20 Thresholds	
			Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (	30 ft.	) Cover	Species	Status	Tree Stratum	0 0
						Sapling/Shrub Stratum	0 0
				<u> </u>		Herb Stratum	23 58
				- <u> </u>		Woody Vine Stratum	0 0
						Woody vine Stratum	0 0
						Dominance Test Workshe	et
						Number of Dominant	
						Species that are OBL,	
						FACW, or FAC:	<u> </u>
						Total Number of Dominant	
						Species Across all Strata:	<u> </u>
			0	= Total Cover		Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub Stratum	Plot Size (	15 ft.	) Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	<u>100.00%</u> (A/B
Stratum			Cover	Species	Status	Describer as he days We shake	
						Prevalence Index Worksh	leet
						Total % Cover of:	
						OBL species 25 x 1	
						FACW species 90 x 2	
	-					FAC species 0 x 3	
						FACU species 0 x 4	
						UPL species 0 x 5	
						Column totals 115 (A)	
						Prevalence Index = B/A =	1.78
			0	= Total Cover			
						Hydrophytic Vegetation In	ndicators:
Herb Stratum	Plot Size (	5 ft.	) Absolute %	Dominant	Indicator	X Rapid test for hydrophy	tic vegetation
	1 101 0120 (	011.	Cover	Species	Status	X Dominance test is >50°	%
Impatiens caper	ารis		60	Y	FACW	X Prevalence index is≤3.	
Phalaris arundir	nacea		15	N	FACW	Morphological adaptati	
Agrimonia parvi	flora		15	N	FACW	supporting data in Rem	arks or on a sepai
Carex comosa			15	N	OBL	sheet)	
Scirpus atrovire	ns		10	N	OBL	Problematic hydrophyti	c vegetation*
						(explain)	
						*Indicators of hydric soil and we	land hydrology must b
						present, unless disturbed or prol	
							<b>a</b>
						Definitions of Vegetation	
			<u>.</u>			Tree - Woody plants 3 in. (7.6 cl at breast height (DBH), regardle	
						Sapling/shrub - Woody plants	-
						greater than 3.28 ft (1 m) tall.	under o in. DDFI di
			115	= Total Cover		Harb - All berbassous (non was	du) plante regardias
				-		Herb - All herbaceous (non-woo size, and woody plants less than	
Woody Vine	Plot Size (	30 ft.	Absolute %		Indicator		
Stratum	, ,		, Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft ir
			<u> </u>	·		height.	
				·			
						Hydrophytic	
						vegetation	
			0	= Total Cover		present? Y	
	to numbers he	re or on a se	parate sheet				
	oto numbers he	re or on a se	parate sheet				
	nto numbers he	re or on a se	parate sheet				
	to numbers he	re or on a se	parate sheet				
	nto numbers he	re or on a se	parate sheet				

Depth	Matrix		Rec	lox Fea	tures		Tautura	D a sea selva					
(Inches)	Color (moist)	%	Color (moist)				Loc**				lexture Remarks		
0-14	10YR 4/1	95	10YR 4/6	5	С	М	silty clay loam						
•••		•		d Matrix	<, CS=Co	vered or	Coated Sand Grains						
*Location:	PL=Pore Lining,	M=Mati	rix										
lydric Soil	Indicators:						Indicators fo	r Problematic Hydric Soils:					
	( )		Dark Su			- (00)	o 14						
Histisol	( )		Polyvali ( <b>MLRA</b>		w Surfac	e (58)		ck (A10) ( <b>MLRA 147)</b>					
	pipedon (A2) listic (A3)		\	,	<b>+o</b> ) ace (S9)			airie Redox (A16) <b>(MLRA 147, 148)</b> Floodplain Soils (F19					
	en Sulfide (A4)		(MLRA				(MLRA 1						
, ,	d Layers (A5)		· ·	,	Matrix (F	2		llow Dark Surface (TF12					
	uck (A10) (LRR	N)	X Deplete			-		plain in Remarks					
	d Below Dark Su		A11 Redox I	Dark Su	urface (F6	5)		•					
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface	(F7)							
Sandy I	Mucky Mineral (S	S1)	Redox I	Redox Depressions (F8)									
(LRR N	, MLRA 147, 14	8)		Iron-Manganese Masses (F12) LRR N, MLRA 136)									
	Gleyed Matrix (S	4			e (F13) <b>(N</b>								
	Redox (S5)			Piedmont Floodplain Soils (F19) MLRA 148) Red Parent Material (F21)(MLRA 127, 147)									
Stripped	d Matrix (S6)		Red Pa	rent Ma	aterial (F2	21) <b>(MLR</b>	A 127, 147)						
Indiantara	of hydrophytic yr	actotion	and watland by	drology		proport	, unless disturbed or p	rahlam					
mulcators		getation	r and wettand ny	arology	inusi be	present	, unless disturbed of p	TODIem					
Restrictive I	_ayer (if observe	d)											
ype:		-					Hydric soil pres	ent? Y					
Depth (inch	es):				_								
) a un a cl													
Remarks:													

Project/Site: Holloway-Knox 138 kV Transmission Lir	City/County: Harrisor	Report Name Wetland PB-14 Sampling Date 6/07/2018
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: W-mdt-6/07/2018-04
Investigator(s) M. Thomayer, T.Qualio; Jacob		hip, Range S19 T12N R5W
Landform (hillslope, terrace, etc.) hillslope	Local relief (concave, co	
Subregion (LRR or MLRA): LRR N Lat.	40.383833	Long.: -81.052798 Datum: NAD 83
Soil Map Unit Name WnE - Westmoreland-Dekalb compl	ex, 25 to 40 percent slope	NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for the	-	X No (If no, explain in remarks
Are vegetatior, soil, or hydrology	significantly disturbe	
Are vegetatior, soil, or hydrology	naturally problemation	
SUMMARY OF FINDINGS		(If needed, explain any answers in remarks
Hydrophytic vegetation present' Yes		
Hydric soil present? Yes	Is the sampled area	a within a wetland? Yes
Wetland hydrology present? Yes		
Remarks:		
PEM wetland on hillside in maintained ROW.		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aq	uatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	X Drainage Patterns (B10)
X Saturation (A3) Oxidized	Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots (C		Dry-Season Water Table (C2)
	e of Reduced Iron (C4)	Crayfish Burrows (C8)
	ron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C		Stunted or Stressed Plants (D1)
	ck Surface (C7)	Geomorphic Position (D2)
	xplain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on AerialOther (E Imagery (B7)		X Microtopographic Relief (D4)
Water-Stained Leaves (B9)	-	X FAC-Neutral Test (D5)
	-	
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No		Wetland
Water table present? Yes No		hydrology
Saturation present? Yes X No	Depth (inches): 0	present? Y
(includes capillary fringe)		
Departies reported data (atracts source manifesting well)	orial photos, providence in	tiona) if availa
Describe recorded data (stream gauge, monitoring well, a	ienai priotos, previous inspec	aons), ii avalla
Remarks:		
Coturated throughout with some ourface flow		
Saturated throughout with some surface flow		

	-			Sampling Point:	W-mdt-6/07/2018-04
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		000/ 500/
Tree Stratum Plot Size ( 30 ft. )					20% 50%
· · · · · · · · · · · · · · · · · · ·	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	33 83
3				Woody Vine Stratum	0 0
4				Woody vine offatani	0 0
4				Dominance Test Workshe	-4
o					et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	2 (A)
9				Total Number of Dominant	
10				Species Across all Strata:	2 (B)
				Opecies Across an Otrata.	(D)
	=	Total Cover		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum Plot Size (15 ft.)	Cover		Status	TAOW, OFTAO.	100.0070 (A/D)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksh	eet
2				Total % Cover of:	
0					00
3				OBL species 90 x 1	
4				FACW species 50 x 2	
5				FAC species 25 x 3	
6				FACU species 0 x 4	= 0
7				UPL species 0 x 5	= 0
8				Column totals 165 (A)	
9				Prevalence Index = $B/A$ =	1.61
				Flevalence index = D/A =	1.01
10					
	=	Total Cover			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	tic vegetation
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
1 Caray undringidag		Y	OBL	X Prevalence index is≤3.0	
1 Carex vulpinoidea	60				
2 Impatiens capensis	50	Y	FACW	Morphological adaptation	
3 Dichanthelium clandestinum	25	N	FAC	supporting data in Rem	arks or on a separate
4 Carex lurida	20	N	OBL	sheet)	
5 Typha angustifolia	5	N	OBL	Problematic hydrophytic	vegetation*
6 Symplocarpus foetidus	5	N	OBL	(explain)	- 3
			ODL		
7				*Indicators of hydric soil and wetl	
8				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation	Strata:
11				-	
12				Tree - Woody plants 3 in. (7.6 cn	
				at breast height (DBH), regardles	s or neight.
13				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
14				greater than 3.28 ft (1 m) tall.	
15					
	165 =	Total Cover		Herb - All herbaceous (non-wood	v) plants regardless of
				size, and woody plants less than	
Woody Vine	Absolute %	Dominant	Indicator	size, and woody plants less than	3.20 It tail.
Stratum Plot Size ( 30 ft. )	Cover	Species	Status		
	Cover	Species	Status	Woody vines - All woody vines g	greater than 3.28 ft in
1				height.	
2					
3					
4				Lively a pice of a	
				Hydrophytic	
5				vegetation	
	0 =	Total Cover		present? Y	
				· · ·	-
Remarks: (Include photo numbers here or on a separa	ate sheet			1	
$\checkmark$					

Depth	Matrix		Red	dox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textule	Remarks
0-14	10YR 4/2	90	10YR 4/6	10	С	М	sandy clay	
				d Matrix	, CS=Co	vered or	Coated Sand Grains	
	PL=Pore Lining,	M=Matr	ix					
lydric Soi	Indicators:				<b>.</b> \		Indicators for	r Problematic Hydric Soils:
Histisol	(1)			urface (S	57) w Surfac	o (S8)	2 om Muo	k (A10) ( <b>MLRA 147)</b>
	(AT) pipedon (A2)			147, 14		e (30)		irie Redox (A16) <b>(MLRA 147)</b>
	listic (A3)		```		ace (S9)			Floodplain Soils (F19
	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 13	36, 147)
	d Layers (A5)				Matrix (F	2		low Dark Surface (TF12
	uck (A10) (LRR		X Deplete		• •		Other (Ex	plain in Remarks
	ed Below Dark Se ark Surface (A1)				rface (F6 Surface (	,		
	Mucky Mineral (S	,			sions (F8	• •		
	, MLRA 147, 14	,		•	•	,	LRR N, MLRA 136)	
•	Gleyed Matrix (S			0	e (F13) <b>(N</b>	· · ·	. ,	
Sandy	Redox (S5)	,	Piedmo	nt Flood	lplain So	ils (F19)	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
	- f la salar a la sta sa							
Indicators	or nyaropnytic ve	egetation	and wetland ny	arology	must be	present	, unless disturbed or p	meidor
Restrictive	Layer (if observe	ed)						
уре:					_		Hydric soil pres	ent? Y
Pepth (inch	es):				-			
Remarks:								
Cinaiko.								
centarito.								
temarks.								
emarks.								

		Report Name Wetland PB-15			
Project/Site: Holloway-Knox 138 kV Transmission					
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: W-mdt-6/07/2018-08			
Investigator(s) M. Thomayer, T.Qualio; Jacob		nship, Range S24 T11N R5W			
Landform (hillslope, terrace, etc.) floodplain	Local relief (concave,				
Subregion (LRR or MLRA): LRR N L Soil Map Unit Name CnD - Coshocton silt loam, 15 to	at.: <u>40.378942</u>	Long.: -81.053108 Datum: NAD 83 NWI Classification: N/A			
Are climatic/hydrologic conditions of the site typical for					
Are vegetation, soil, or hydrology Are vegetation, soil, or hydrology					
		(If needed, explain any answers in remark			
SUMMARY OF FINDINGS					
Hydrophytic vegetation present Yes					
Hydric soil present? Yes	Is the sampled a	rea within a wetland? Yes			
Wetland hydrology present? Yes					
Remarks:					
Remarks.					
PEM wetland in maintained ROW/cow pastu	re and within 100-Year fl	loodolain			
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil Cracks (B6)			
X Surface Water (A1) True	Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2) X Hydro	ogen Sulfide Odor (C1)	Drainage Patterns (B10)			
X Saturation (A3) Oxidi	zed Rhizospheres on Living	Moss Trim Lines (B16)			
Water Marks (B1) Roots		Dry-Season Water Table (C2)			
Sediment Deposits (B2) Prese	ence of Reduced Iron (C4)	Crayfish Burrows (C8)			
	nt Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Soils		Stunted or Stressed Plants (D1)			
	Muck Surface (C7)	X Geomorphic Position (D2)			
Inundation Visible on Aerial Other	(Explain in Remarks)	Shallow Aquitard (D3)			
Imagery (B7)		Microtopographic Relief (D4)			
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)			
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes X No	Depth (inches):	1 Wetland			
Water table present? Yes No	X Depth (inches):	hydrology			
Saturation present? Yes X No	Depth (inches):	0 present? Y			
(includes capillary fringe)					
Describe recorded data (stream gauge, monitoring we	L parial photos, provious ins				
Describe recorded data (siteani gauge, monitoring we	i, aeriai priotos, previous INS				
Remarks:					
Saturated throughout, 80% inundated					

	-			Sampling Point:	W-mdt-6/07/2018-0
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	20% 50%
	Cover	Opecies	Status		
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	21 53
3				Woody Vine Stratum	0 0
4					
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	2 (A)
9				Total Number of Dominant	( )
10				Species Across all Strata:	2 (B)
10				Species Across an Strata.	<u> </u>
	=	Total Cover		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum Plot Size ( 15 ft. )	Cover	Species	Status	,	(+=)
	00101	Openice	Olaldo		
1				Prevalence Index Worksho	eet
2				Total % Cover of:	
3				OBL species 70 x 1	= 70
4				FACW species 35 x 2	
5			·	FAC species 0 x 3	
6				FACU species 0 x 4	
7	·			UPL species 0 x 5	
8				Column totals 105 (A)	140 (B)
9				Prevalence Index = B/A =	1.33
10					
	0 =	Total Cover			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	X Rapid test for hydrophyt	
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	$\frac{X}{X}$ Dominance test is >50%	
1 Carevy underingidae		Y	OBL		
1 Carex vulpinoidea	60			X Prevalence index is<3.0	
2 Carex cristatella	30	Y	FACW	Morphological adaptation	
3 Scirpus atrovirens	10	N	OBL	supporting data in Rema	arks or on a separate
4 Eupatorium perfoliatum	5	N	FACW	sheet)	
5				Problematic hydrophytic	vegetation*
6				(explain)	-
7				*Indicators of hydric soil and wetl	and hydrology must be
8				present, unless disturbed or prob	
9				problem, unloss distanced of prob	lomatio
					N
10				Definitions of Vegetation S	Strata:
11				Tree - Woody plants 3 in. (7.6 cm	<ol> <li>or more in diameter</li> </ol>
12				at breast height (DBH), regardles	s of height.
13					-
14				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
15				greater than 3.28 ft (1 m) tall.	
	105 =	Total Cover			ha) alaata ya soo ili soo i
				Herb - All herbaceous (non-wood	
Woody Vine	Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
Stratum	Cover	Species	Status	Woody vines - All woody vines g	reater than 3.28 ft in
1				height.	
2					
3					
4				Hydrophytic	
5					
J				vegetation	
	=	Total Cover		present? Y	<u>.</u>
Remarks: (Include photo numbers here or on a separa	ate sheet)				
· · · · ·					

Depth	Matrix			dox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	- 116	
0-14	10YR 5/2	95	10YR 4/6	10	С	M	silty clay	
Terra O. C	L.	Deviation						
	PL=Pore Lining,			d Matrix	, CS=Co	vered or	Coated Sand Grains	
	I Indicators:	wi–wau	^				Indicators for	Problematic Hydric Soils:
yane ooi	i malcator 3.		Dark S	urface (S	S7)		indicators for	Toblematic Hydric cons.
Histiso	( )		,		w Surfac	e (S8)		< (A10) ( <b>MLRA 147)</b>
	pipedon (A2)		`	147, 14	,			irie Redox (A16) <b>(MLRA 147, 14</b>
	listic (A3) en Sulfide (A4)			ark Surfa 147, 14	ace (S9)		(MLRA 13	Floodplain Soils (F19
_ / 0	ed Layers (A5)				Matrix (F	2	Very Shall	ow Dark Surface (TF12)
2 cm M	luck (A10) (LRR		X Deplete	ed Matrix	(F3)			blain in Remarks
	ed Below Dark S	•			rface (F6			
	Dark Surface (A1	,			Surface	• •		
,	Mucky Mineral (\$ <b>I, MLRA 147, 14</b>	,			ions (F8 e Masse		LRR N, MLRA 136)	
	Gleyed Matrix (S				e (F13) <b>(N</b>			
	Redox (S5)	1	Piedmo	nt Flood	dplain So	oils (F19)	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
ndicators	of hydrophytic y	anotation	and wetland by	drology	must ha	nresent	, unless disturbed or pr	ohlem
nuicators		getation		arology	mustbe	present		obient
	Layer (if observe	ed)						
ype:	ies):				-		Hydric soil pres	
)epth (inch					-			
Depth (inch						-		
epth (inch Remarks:								
•								
• •								

Report Name Wetland PB-16
Project/Site: Holloway-Knox 138 kV Transmission Line City/County: Harrison Sampling Date 6/07/2018
Applicant/Owner:         FirstEnergy         State:         Ohio         Sampling Point:         W-mdt-6/07/2018-07
Investigator(s) M. Thomayer, T.Qualio; Jacob: Section, Township, Range S24 T11N R5W
Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none) concave Slope (%):
Subregion (LRR or MLRA):       LRR N       Lat.:       40.377245       Long.:       -81.053006       Datum:       NAD 83         Soil Map Unit Name CnD - Coshocton silt loam, 15 to 25 percent slope       NWI Classification:       R4SBC
Are climatic/hydrologic conditions of the site typical for this time of the yea Yes X No (If no, explain in remarks
Are vegetatior, soil, or hydrology significantly disturbed? Are "normal circumstances" Yes
Are vegetatior, soil, or hydrologynaturally problematic' present?
(If needed, explain any answers in remark
SUMMARY OF FINDINGS
Hydrophytic vegetation present Yes
Hydric soil present? Yes Is the sampled area within a wetland? Yes
Wetland hydrology present? Yes
Remarks:
DEM watered in maintained DOW. Northern partian of watered is surrounded by as field
PEM wetland in maintained ROW. Northern portion of wetland is surrounded by ag field
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
X Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) X Hydrogen Sulfide Odor (C1) X Drainage Patterns (B10)
X       Saturation (A3)       Oxidized Rhizospheres on Living       Moss Trim Lines (B16)         Water Marks (B1)       Roots (C3)       Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8)
Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6) Stunted or Stressed Plants (D1)
Iron Deposits (B5) X Thin Muck Surface (C7) X Geomorphic Position (D2)
Inundation Visible on AerialOther (Explain in Remarks)Shallow Aquitard (D3) Imagery (B7) X Microtopographic Relief (D4)
Water-Stained Leaves (B9) X FAC-Neutral Test (D5)
Aquatic Fauna (B13)
Field Observations:
Surface water present? Yes X No Depth (inches): 1 Wetland
Water table present? Yes <u>No X</u> Depth (inches): hydrology
Saturation present? Yes X No Depth (inches): 0 present? Y
(includes capillary fringe)
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if availa
Remarks:
Saturated throughout, 80% inundated; some surface flow

				Sampling Point:	W-mdt-6/07/2018-07
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		000/ 500/
Tree Stratum Plot Size ( 30 ft. )					20% 50%
,	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	26 65
3				Woody Vine Stratum	0 0
				woody vine offatani	0 0
4				<b>D</b>	. 4
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	2 (A)
9				Total Number of Dominant	、
					2 (D)
10				Species Across all Strata:	(B)
	0 =	Total Cover		Percent of Dominant	
				Species that are OBL,	
Sopling/Shrub	Absolute %	Dominant	Indicator		100.000/ (A/D)
Sapling/Shrub Plot Size (15 ft.)				FACW, or FAC:	<u>100.00%</u> (A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksho	eet
		<u> </u>		Total % Cover of:	
2					
3				OBL species <u>55</u> x 1	
4				FACW species 75 x 2	
5				FAC species 0 x 3	= 0
6				FACU species 0 x 4	
7				UPL species 0 x 5	
8				Column totals 130 (A)	
9				Prevalence Index = B/A =	1.58
10					
	0 =	Total Cover			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator		
Herb Stratum Plot Size ( 5 ft. )				X Rapid test for hydrophyl	
	Cover	Species	Status	X Dominance test is >50%	
1 Phalaris arundinacea	60	Y	FACW	X Prevalence index is≤3.0	
2 Symplocarpus foetidus	40	Y	OBL	Morphological adaptation	ons* (provide
3 Carex crinita	15	N	OBL	supporting data in Rema	
4 Impatiens capensis	15	N	FACW	sheet)	
	10			/	*
5				Problematic hydrophytic	vegetation
6				(explain)	
7				*Indicators of hydric soil and wetl	and hydrology must be
8				present, unless disturbed or prob	lematic
9					
				Definitions of Vegetation	Strata
10				Demnitions of vegetation a	Sirala:
11				Tree - Woody plants 3 in. (7.6 cm	n) or more in diameter
12				at breast height (DBH), regardles	s of height.
13					-
14			·	Sapling/shrub - Woody plants le	ess than 3 in. DBH and
15				greater than 3.28 ft (1 m) tall.	
·~	130 =	Total Cover			
	150 =			Herb - All herbaceous (non-wood	dy) plants, regardless of
	AL	<b>D</b>		size, and woody plants less than	3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		
Stratum	Cover	Species	Status	Woody vines - All woody vines g	preater than 3.28 ft in
1				height.	
2					
3			·		
4				Hydrophytic	
5				vegetation	
°		Tatal Cause		_	
		Total Cover		present? Y	-
Remarks: (Include photo numbers here or on a separa	ate sheet				

Sampling Point: W-mdt-6/07/2018-07

Depth	Matrix		Red	dox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					silty clay	
	,		,	d Matrix	, CS=Co	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mati	ix					
Hydric Soi	Indicators:			urface (S			Indicators for I	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I Sandy I Sandy Sandy I Strippe	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) <b>(LRR</b> d Below Dark Su ark Surface (A12 Mucky Mineral (S , <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface (A 2) 51) <b>8)</b> (4)	(MLRA Thin Da (MLRA Loamy Deplete A11 Redox Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Su Depress Inganes Surface Int Flooo rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) Irface (F6) Surface Surface (F13) (N dplain Sc terial (F2)	2 (F7) ) s (F12) I //LRA 13 //IS (F19) 21)(MLR/	Coast Prairi Piedmont F (MLRA 136 Very Shallo X Other (Expl	w Dark Surface (TF12 ain in Remarks
Restrictive Type: Depth (inch	_ayer (if observe es):	ed)			-		Hydric soil prese	nt? <u>Y</u>
Remarks:						<u>I</u>		
	summed hydr g soil appeara		to strong hydr	ology a	and veg	etative	indicators. Flooding	and sedimentation likely

		Report Name Wetland PB-17				
Project/Site: Holloway-Knox 138 kV Transmis						
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: W-mdt-6/07/2018-06				
Investigator(s) M. Thomayer, T.Qualio; Jacob:		nship, Range S24 T11N R5W				
Landform (hillslope, terrace, etc.) terrace	Local relief (concave,					
Subregion (LRR or MLRA): <u>LRR N</u> Soil Map Unit Name CnD - Coshocton silt loam, 1	Lat.: 40.375372	Long.: -81.052971 Datum: NAD 83 NWI Classification: N/A				
•						
Are climatic/hydrologic conditions of the site typic	-					
Are vegetatior, soil, or hydr						
Are vegetatior, soil, or hyde	ology naturally problem					
SUMMARY OF FINDINGS		(If needed, explain any answers in remarks				
Hydrophytic vegetation present Yes						
Hydric soil present? Yes	Is the sampled a	rea within a wetland? Yes				
Wetland hydrology present? Yes						
Remarks:	•					
PEM wetland valley in maintained ROW						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; c	heck all that apply)	Surface Soil Cracks (B6)				
		<u> </u>				
	True Aquatic Plants (B14)					
	Hydrogen Sulfide Odor (C1)	X Drainage Patterns (B10)				
	Oxidized Rhizospheres on Living					
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)				
	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)				
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)				
Iron Deposits (B5)	Thin Muck Surface (C7)	X Geomorphic Position (D2)				
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)				
Imagery (B7)		X Microtopographic Relief (D4)				
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)				
Aquatic Fauna (B13)						
Field Observations:						
Surface water present? Yes N	o X Depth (inches):	Wetland				
Water table present? Yes N	o X Depth (inches):	hydrology				
Saturation present? Yes X N	o Depth (inches):	0 present? Y				
(includes capillary fringe)						
Describe recorded data (stream gauge, monitorin	g well, aerial photos, previous ins	pections), if availa				
Remarks:						
Saturated throughout						
Saturated throughout						

				Sampling Point:	W-mdt-6/07/2018-06
				50/20 Thresholds	
	Abaal ( Of	Danai	la d'a d	50/20 11165110105	
Tree Stratum Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		20% 50%
	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	27 68
3				Woody Vine Stratum	0 0
				woody vine Stratum	0 0
4				<b>D</b>	
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	1 (A)
9				Total Number of Dominant	
10				Species Across all Strata:	1 (B)
				Species Across an Strata.	(D)
		<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum Plot Size (15 ft.)	Cover		Status	1 4010, 611 40.	<u>100.0070</u> (AD)
Siralum	Cover	Species	Status		
1				Prevalence Index Worksh	eet
2				Total % Cover of:	
2					25
3				OBL species <u>35</u> x 1	
4				FACW species 100 x 2	
5				FAC species 0 x 3	
6				FACU species 0 x 4	= 0
7				UPL species 0 x 5	= 0
8				Column totals 135 (A)	
9				Prevalence Index = $B/A =$	1.74
				Prevalence index = D/A =	1.74
10					
		Total Cover			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	
Herb Stratum Plot Size (5 ft.)	Cover	Species	Status	$\frac{X}{X}$ Dominance test is >50%	
A Dhalania ammalina a a		•			
1 Phalaris arundinacea	100	Y	FACW	X Prevalence index is≤3.0	
2 Symplocarpus foetidus	20	N	OBL	Morphological adaptation	
3 Carex crinita	15	N	OBL	supporting data in Rema	arks or on a separate
4				sheet)	
5				Problematic hydrophytic	vegetation*
					vegetation
6				(explain)	
1				*Indicators of hydric soil and wetl	
8				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation	Strata:
10				•	
				Tree - Woody plants 3 in. (7.6 cn	,
12				at breast height (DBH), regardles	s of height.
13	. <u> </u>			Sapling/shrub - Woody plants le	ass than 3 in DRH and
14					
15				greater than 3.28 ft (1 m) tall.	
	135 =	Total Cover			
				Herb - All herbaceous (non-wood	
Woody Vino	Abcolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute %				
Stratum	Cover	Species	Status	Woody vines - All woody vines g	greater than 3.28 ft in
1				height.	
2				-	
2					
4				Hydrophytic	
5				vegetation	
	0 =	Total Cover		present? Y	
				present: 1	-
Demostra (Indude abote austration base as a	ata abast			1	
Remarks: (Include photo numbers here or on a separa	ate sheet				

Depth	Matrix			dox Feat		Loc** Texture		Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*		- 116	
0-14	10YR 4/1	90	10YR 3/4	10	С	M	silty clay	-
Turney C. C		Depletie		el Matrix			Coated Sand Grains	
	PL=Pore Lining,			a Matrix	, 05=00	verea or	Coated Sand Grains	
	I Indicators:	-Main	~				Indicators for	Problematic Hydric Soils:
yane ooi	i malcator 5.		Dark S	urface (S	57)		indicators for	Troblematic Hydric cons.
Histiso	( )				w Surfac	e (S8)		k (A10) ( <b>MLRA 147)</b>
	Epipedon (A2)		`	147, 14	,			irie Redox (A16)(MLRA 147, 148
	listic (A3) en Sulfide (A4)			147, 14	ace (S9)		(MLRA 13	Floodplain Soils (F19
	ed Layers (A5)				Matrix (F	2		low Dark Surface (TF12)
2 cm M	luck (A10) (LRR	,	X Deplete	d Matrix	(F3)			plain in Remarks
	ed Below Dark S	· · ·			rface (F6	,		
	Dark Surface (A1	,	·		Surface	• •		
•	Mucky Mineral (\$ I, MLRA 147, 14	,			ions (F8		LRR N, MLRA 136)	
	Gleyed Matrix (S		Umbric	Surface	e (F13) <b>(N</b>	/LRA 13	6, 122)	
	Redox (S5)		Piedmo	nt Flood	dplain So	oils (F19)	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
ndicators	of hydrophytic y	agetation	and wetland by	drology	must ha	nresent	, unless disturbed or pr	roblem
naicators		egetation		ulology	mustbe	present		
	Layer (if observe	ed)						
ype:	ies):				-		Hydric soil pres	
eom uncr					-			
eptn (inci						-		
Depth (inch Remarks:								
•								
• •								

		Report Name Wetland PB-18		
Project/Site: Holloway-Knox 138 kV Trans	mission Line City/County: Harri			
Applicant/Owner: FirstEnergy	State: Ohio			
Investigator(s) M. Thomayer, T.Qualio; Jaco		nship, Range S24 T11N R5W		
Landform (hillslope, terrace, etc.) terrace	Local relief (concave			
Subregion (LRR or MLRA): LRR N	Lat.: <u>40.37487</u>	Long.: -81.053009 Datum: NAD 83		
Soil Map Unit Name CnD - Coshocton silt loan		NWI Classification: R4SBC		
Are climatic/hydrologic conditions of the site ty	, ,			
	ydrology X significantly distu			
Are vegetatior, soil, or h	ydrologynaturally problem			
SUMMARY OF FINDINGS		(If needed, explain any answers in remarks		
Hydrophytic vegetation present' Yes	is the complete	area within a watland?		
Hydric soil present? Yes	is the sampled a	area within a wetland? Yes		
Wetland hydrology present? Yes				
Remarks:				
PEM wetland in stream valley in main	tained ROW. Recently impacte	ed by pipeline construction.		
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required	d; check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)	True Aquatic Plants (B14)	X Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	X Drainage Patterns (B10)		
X Saturation (A3)	Oxidized Rhizospheres on Living	Moss Trim Lines (B16)		
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)		
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)		
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)		
Iron Deposits (B5)	Thin Muck Surface (C7)	X Geomorphic Position (D2)		
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)		
Imagery (B7)		Microtopographic Relief (D4)		
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)		
Aquatic Fauna (B13)		<u></u>		
Field Observations:		Wetland		
	No X Depth (inches):			
Surface water present? Yes		bydrology		
Surface water present?     Yes       Water table present?     Yes	No X Depth (inches):	hydrology		
Surface water present?YesWater table present?YesSaturation present?YesX	No X Depth (inches):	hydrology           0         present?         Y		
Surface water present?     Yes       Water table present?     Yes	No X Depth (inches):			
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)       X	No X Depth (inches): No Depth (inches):	0 present? Y		
Surface water present?YesWater table present?YesSaturation present?YesX	No X Depth (inches): No Depth (inches):	0 present? Y		
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)         Describe recorded data (stream gauge, monitor)	No X Depth (inches): No Depth (inches):	0 present? Y		
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)       X	No X Depth (inches): No Depth (inches):	0 present? Y		
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)         Describe recorded data (stream gauge, monitor)	No X Depth (inches): No Depth (inches):	0 present? Y		
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)         Describe recorded data (stream gauge, monitor         Remarks:	No X Depth (inches): No Depth (inches): pring well, aerial photos, previous ins	0 present? Y		
Surface water present?       Yes         Water table present?       Yes         Saturation present?       Yes         (includes capillary fringe)         Describe recorded data (stream gauge, monitor)	No X Depth (inches): No Depth (inches): pring well, aerial photos, previous ins	0 present? Y		

e ( 30 ft.		Dominant Species	Indicator Status	50/20 Thresholds         20%       50%         Tree Stratum       0       0         Sapling/Shrub Stratum       0       0         Herb Stratum       23       58         Woody Vine Stratum       0       0         Dominance Test Worksheet       0       0         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 Across all Strata:       4       Species
e ( 15 ft.	) Cover	Species		Tree Stratum00Sapling/Shrub Stratum00Herb Stratum2358Woody Vine Stratum00Dominance Test WorksheetNumber of DominantSpecies that are OBL,FACW, or FAC:4(A)Total Number of DominantSpecies Across all Strata:4(B)
e ( 15 ft.				Sapling/Shrub Stratum       0       0         Herb Stratum       23       58         Woody Vine Stratum       0       0         Dominance Test Worksheet       0       0         Number of Dominant       Species that are OBL,       (A)         FACW, or FAC:       4       (A)         Total Number of Dominant       Species Across all Strata:       4       (B)
e ( 15 ft.				Herb Stratum       23       58         Woody Vine Stratum       0       0         Dominance Test Worksheet       0       0         Number of Dominant       Species that are OBL,       4         FACW, or FAC:       4       (A)         Total Number of Dominant       Species Across all Strata:       4
e ( 15 ft.				Woody Vine Stratum     0     0       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)
·	Absolute %			Dominance Test Worksheet         Number of Dominant         Species that are OBL,         FACW, or FAC:       4         Total Number of Dominant         Species Across all Strata:       4         (B)
·	Absolute %			Number of Dominant         Species that are OBL,         FACW, or FAC:       4 (A)         Total Number of Dominant         Species Across all Strata:       4 (B)
·	Absolute %			Species that are OBL,         FACW, or FAC:       4 (A)         Total Number of Dominant         Species Across all Strata:       4 (B)
·	Absolute %			FACW, or FAC:       4       (A)         Total Number of Dominant
·	Absolute %			Total Number of Dominant         Species Across all Strata:         4         (B)
·	Absolute %			Species Across all Strata:(B)
·	Absolute %			
·		Dominant		
·		Dominant		Species that are OBL,
		Species	Indicator Status	FACW, or FAC: <u>100.00%</u> (A/E
				Prevalence Index Worksheet
				Total % Cover of:
				OBL species <u>80</u> x 1 = <u>80</u>
				FACW species 35 x 2 = 70
				FAC species $0 \times 3 = 0$
				FACU species $0 \times 4 = 0$
				UPL species $0 \times 5 = 0$
				Column totals 115 (A) 150 (B)
				Prevalence Index = $B/A = 1.30$
		- Total Cover		
				Hydrophytic Vegetation Indicators:
e (5 ft	Absolute %	Dominant	Indicator	Rapid test for hydrophytic vegetation
	Cover	Species	Status	X Dominance test is >50%
	30	Y	OBL	X Prevalence index is≤3.0*
	25	Y	OBL	Morphological adaptations* (provide
	15	Y	OBL	supporting data in Remarks or on a sepa
	15	Y	FACW	sheet)
	10	N	OBL	Problematic hydrophytic vegetation*
	10	N	FACW	(explain)
				*Indicators of hydric soil and wetland hydrology must
				present, unless disturbed or problematic
				Definitions of Vegetation Strata:
			<u> </u>	<b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter
				at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH ai
				greater than 3.28 ft (1 m) tall.
	115 =	Total Cover		Herb - All herbaceous (non-woody) plants, regardless
	Absoluto 9/	Dominant	Indicator	size, and woody plants less than 3.28 ft tall.
e ( 30 ft.	) Absolute % Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft ir height.
			. <u> </u>	
			<u> </u>	Hydrophytic vegetation
	0 =	Total Cover		present? Y
				·
		ze ( 5 ft. ) Absolute % Cover 30 25 15 15 10 10 10 10 10 25 15 15 25 15 15 10 10 10 25 15 15 10 10 10 25 15 15 10 10 10 10 10 10 10 10 10 10	ze ( 5 ft. ) Absolute % Dominant Cover Species 30 Y 25 Y 15 Y 15 Y 10 N 10 N 10 N 10 N 10 N 20 Y 15 Y 10 N 10 N	ze ( 5 ft. )  Absolute %  Cover Species Status  30  25  Y OBL  08L  08L  08L  08L  08L  08L  08L  08L  08L  7 FACW  08L  15  Y FACW  08L  10 N FACW  10 N SPACW  10 N SP

Sampling Point: W-mdt-6/07/2018-05

Depth	Matrix		Red	dox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Техцие	
0-14	10YR 4/1	100					silty clay	
T		Destati		d Martala				
		•		d Matrix	, CS=Co	verea or	Coated Sand Grains	
	PL=Pore Lining,	ivi=iviati	IX					
Hydric Soil	Indicators:				<b>.</b>		Indicators for	or Problematic Hydric Soils:
l listis al	( )			urface (S	57) w Surfac	o (S9)	O are Mu	
Histisol	(A1) pipedon (A2)		,	147, 14		e (30)		ck (A10) ( <b>MLRA 147)</b> airie Redox (A16) <b>(MLRA 147, 148</b> )
	listic (A3)		`		ace (S9)			t Floodplain Soils (F19
	en Sulfide (A4)			147, 14	. ,		(MLRA 1	
	d Layers (A5)		`	,	Matrix (F	2		llow Dark Surface (TF12
	uck (A10) (LRR	N)	Deplete					kplain in Remarks
Deplete	d Below Dark Su	urface (A	A11 Redox	Dark Su	rface (F6	5)		
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface	(F7)		
Sandy I	Mucky Mineral (S	61)	Redox	Depress	ions (F8	)		
	, MLRA 147, 14						LRR N, MLRA 136)	
	Gleyed Matrix (S	4			e (F13) <b>(N</b>			
	Redox (S5)					· · ·	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2		A 127, 147)	
*Indicators	of hydrophytic ye	netation	and wetland by	drology	must he	nresent	, unless disturbed or p	oroblem
maioatoro		gotatio	rana wettand ny	arology	111001.00	proboni		Josiem
Restrictive I	Layer (if observe	d)						
Туре:					_		Hydric soil pres	sent? Y
Depth (inch	es):				-			
Remarks:								
		inalina	oonotruction of	and acc	home	hydria a	tuo to strong vogo	tative and hydrologic indicate
Disturbe	ea for recent p	ipeime	construction a	anu ass	sumeu	nyunc c	ue to strong vege	tative and hydrologic indicato

Project/Site: Holloway-Knox 138 kV Transmission Line City/County: Har	rison Report Name: <u>Wetland PB-19</u>		
Applicant/Owner: FirstEnergy State: Ohio			
	wnship, Range: S23 T11N R5W		
Landform (hillslope, terrace, etc.): terrace Local relief (concave			
Subregion (LRR or MLRA) LRR N Lat.: 40.363957	Long.: -81.052631 Datum: NAD 83		
Soil Map Unit Name WnE - Westmoreland-Dekalb complex, 25 to 40 percent slo	ppes NWI Classification: N/A		
Are climatic/hydrologic conditions of the site typical for this time of the year Year			
Are vegetation, soil, or hydrologysignificantly dist	turbed? Are "normal Yes		
Are vegetatior, soil, or hydrologynaturally problem			
SUMMARY OF FINDINGS	(If needed, explain any answers in remark		
Hydrophytic vegetation present <u>Yes</u>			
Hydric soil present? Yes Is the sampled	area within a wetland? Yes		
Wetland hydrology present? Yes			
Pemerke:			
Remarks:			
DEM watered along attracts and need within valley in eviating DO			
PEM wetland along stream and pond within valley in existing RC	JVV.		
HYDROLOGY			
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)		
X Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)		
X     High Water Table (A2)       High Water Table (A2)     Hydrogen Sulfide Odor (C1)	X Drainage Patterns (B10)		
• • • • • • • • • • • • • • • •			
Water Marks (B1) Roots (C3) Sediment Deposits (B2) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2) Crayfish Burrows (C8)		
Drift Deposits (B3) Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) Soils (C6)	Stunted or Stressed Plants (D1)		
Iron Deposits (B5) Thin Muck Surface (C7)	X Geomorphic Position (D2)		
	Shallow Aquitard (D3)		
Inundation Visible on AerialOther (Explain in Remarks) Imagery (B7)	X Microtopographic Relief (D4)		
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)		
Aquatic Fauna (B13)	<u>X</u>   AO-Neutral Test (D3)		
Field Observations:	Watland		
Surface water present? Yes X No Depth (inches):	1 Wetland		
Water table present? Yes X No Depth (inches):	2 hydrology		
Saturation present? Yes X No Depth (inches):	0 present? Y		
(includes capillary fringe)			
Describe recorded data (stream gauge, monitoring well, aerial photos, previous	inspections), if available:		
Remarks:			

				Sampling Point:	W-bao-6/11/202
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	0 0
1	00101	Openice	Olaldo	Sapling/Shrub Stratum	0 0
				Herb Stratum	20 50
			<u> </u>		
3				Woody Vine Stratum	0 0
				Deminence Test Worksho	
5			·	Dominance Test Workshe	et
5				Number of Dominant	
			·	Species that are OBL,	- (I)
8			·	FACW, or FAC:	<u> </u>
				Total Number of Dominant	
)				Species Across all Strata:	<u> </u>
	0 =	<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/I
Stratum Plot Size ( 15 ft. )	Cover	Species	Status		(, t
	0010	opeoloo	etatae	<b>–</b> – – – – – – – – – – – – – – – – – –	
			·	Prevalence Index Worksh	eet
				Total % Cover of:	
			. <u> </u>	OBL species <u>10</u> x 1	
l			. <u> </u>	FACW species 70 x 2	
				FAC species 20 x 3	
<u> </u>				FACU species <u>0</u> x 4	
				UPL species 0 x 5	
3				Column totals 100 (A)	210 (B)
				Prevalence Index = B/A =	2.10
	0 =	<ul> <li>Total Cover</li> </ul>			
				Hydrophytic Vegetation Ir	ndicators
Herb Stratum Plot Size ( 5 ft. )	Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
Juncus effusus	40	Ŷ	FACW	X Prevalence index is≤3.0	
2 Impatiens capensis	20	Y	FACW	Morphological adaptation	
3 Euphorbia purpurea	20	Y	FAC	supporting data in Rem	
1 Onoclea sensibilis	10	N	FACW	sheet)	
5 Carex vulpinoidea	10	<u> </u>	OBL	Problematic hydrophytic	c vegetation*
) )				(explain)	
7				*Indicators of hydric soil and wet	land hydrology must
3				present, unless disturbed or prob	
2			·	present, unless distanced of pres	Jonato
)			·	Definitions of Vegetation	Strata:
· · · · · · · · · · · · · · · · · · ·				-	
			·	Tree - Woody plants 3 in. (7.6 cm	
2				breast height (DBH), regardless	of height.
3				Sapling/shrub - Woody plants le	ess than 3 in. DBH a
			·	greater than 3.28 ft (1 m) tall.	
5	100	Total Cause	·		
	100 =	Total Cover		Herb - All herbaceous (non-wood	dy) plants, regardles
Weedy Vine	Abachite 0/	Dominant	Indiantar	size, and woody plants less than	3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		
	Cover	Species	Status	Woody vines - All woody vines	greater than 3.28 ft i
Stratum				height.	
Stratum					
Stratum					
Stratum		·			
Stratum				Hydrophytic	
				Hydrophytic vegetation	
Stratum		= Total Cover		vegetation	
Stratum		= Total Cover			-
Stratum		- Total Cover		vegetation	-
Stratum		Total Cover		vegetation	-
Stratum		Total Cover		vegetation	
Stratum		Total Cover		vegetation	
Stratum		Total Cover		vegetation	
Stratum		Total Cover		vegetation	_
		Total Cover		vegetation	-

· · ·	Matrix			lox Fea		Loc** Texture Re		Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*				
0-16	10YR 4/2	95	10YR 5/8	5	С	PL	Silty clay		
Type: C=0	Concentration, D	=Deple	tion, RM=Reduc	ed Matr	ix, CS=0	Covered	or Coated Sand Grains		
	PL=Pore Lining				-				
lydric Soi	I Indicators:						Indicators for F	Problematic Hydric Soils:	
Hydrog Stratifia 2 cm N Depleta Thick I Sandy (LRR N Sandy Sandy Strippe	listic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) <b>(LRR</b> ed Below Dark S Dark Surface (A1 Mucky Mineral ( I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic v	Surface 2) S1) <b>I8)</b> S4	(MLRA Loamy X Deplete (A11 Redox Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 Gleyed ed Matri Dark Sue d Dark Depress anganes Surface ont Floor rrent Ma	Matrix ( x (F3) urface (F Surface sions (F8 se Masse e (F13) ( dplain So aterial (F)	F2) 6 <sup>°</sup> , (F7) 3) es (F12) <b>MLRA 1</b> oils (F19 21) <b>(MLF</b>	(MLRA 136 Very Shallor	w Dark Surface (TF12) ain in Remarks)	
Restrictive ype: Depth (inch	Layer (if observenes):	ed)			-		Hydric soil preser	nt? <u>Y</u>	
emarks:									

Project/Site: Holloway-Knox 138 kV Transmission Li	ne City/County: Harris	Report Name: <u>Wetland PB-20</u> son Sampling Date: 6/11/2018			
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point W-bao-6/11/2018-03			
Investigator(s): M. Thomayer, B.Otto; Jacobs		nship, Range: S23 T11N R5W			
Landform (hillslope, terrace, etc.): terrace	Local relief (concave,				
Subregion (LRR or MLRA) LRR N Lat.		Long.: -81.052034 Datum: NAD 83			
Soil Map Unit Name WnE - Westmoreland-Dekalb comp	lex, 25 to 40 percent slop	es NWI Classification: N/A			
Are climatic/hydrologic conditions of the site typical for the	nis time of the year Yes	X No (If no, explain in remarks			
Are vegetation, soil, or hydrology	significantly distu	bed? Are "normal Yes			
Are vegetatior, soil, or hydrology	naturally problem				
SUMMARY OF FINDINGS		(If needed, explain any answers in remar			
Hydrophytic vegetation present' Yes					
Hydric soil present? Yes	Is the sampled a	rea within a wetland? Yes			
Wetland hydrology present? Yes					
Remarks:					
Remarks.					
DEM watland along atraam within valley in a	viating DOW				
PEM wetland along stream within valley in ex	listing ROW.				
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check a	ll that apply)	Surface Soil Cracks (B6)			
	uatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)			
	n Sulfide Odor (C1)				
	Rhizospheres on Living	Moss Trim Lines (B16)			
Water Marks (B1) Roots (C	,	Dry-Season Water Table (C2)			
	e of Reduced Iron (C4)	Crayfish Burrows (C8)			
	ron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4) Soils (Cl					
	ck Surface (C7)	X Geomorphic Position (D2)			
	xplain in Remarks)	Shallow Aquitard (D3)			
Imagery (B7)		Microtopographic Relief (D4)			
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)			
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes X No	Depth (inches):	Wetland			
Water table present? Yes X No	Depth (inches): 2	hydrology			
Saturation present? Yes X No	Depth (inches): surf	ace present? Y			
(includes capillary fringe)					
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous in	spections), if available:			
Remarks:					

# **VEGETATION** - Use scientific names of plants

Sampling Point: W-bao-6/11/2018-0

				Samping Form. W-ba0-6/11/2016-0
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0
1		Openies	Olalus	Sapling/Shrub Stratum 0 0
2				Herb Stratum 20 50
3				Woody Vine Stratum 0 0
5				Dominance Test Worksheet Number of Dominant
6				Species that are OBL,
8				FACW, or FAC: 3 (A)
9				Total Number of Dominant
10				Species Across all Strata:3(B)
		= Total Cover		Percent of Dominant
Capling/Chruh	Abaaluta	Dominant	Indiantar	Species that are OBL,
Sapling/Shrub Plot Size(15 ft.) Stratum	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC: <u>100.00%</u> (A/B)
1				Prevalence Index Worksheet
2				Total % Cover of:
3				OBL species $30 \times 1 = 30$ FACW species $60 \times 2 = 120$
5				FAC species $10 \times 3 = 30$
6				FACU species $0 x 4 = 0$
7				UPL species $0 \times 5 = 0$
8				Column totals $100$ (A) $180$ (B) Prevalence Index = B/A = $1.80$
9 10				Prevalence index = B/A = 1.00
	0 =	Total Cover		Hydrophytic Vegetation Indicators:
	Absolute	Dominant	Indicator	X Rapid test for hydrophytic vegetation
Herb Stratum Plot Size ( 5 ft. )	% Cover	Species	Status	X Dominance test is >50%
1 Leersia oryzoides	20	Y	OBL	X Prevalence index is≤3.0*
2 Impatiens capensis	20	Y	FACW	Morphological adaptations* (provide
3 Juncus effusus 4 Onoclea sensibilis	20 10	<u> </u>	FACW FACW	supporting data in Remarks or on a separate sheet)
5 Carex Iurida	10	<u> </u>	OBL	Problematic hydrophytic vegetation*
6 Carex cristatella	10	<u> </u>	FACW	(explain)
7 Euphorbia purpurea	10	N	FAC	*Indicators of hydric soil and wetland hydrology must
8				be present, unless disturbed or problematic
10				Definitions of Vegetation Strata:
11				Tree - Woody plants 3 in. (7.6 cm) or more in
12 13				diameter at breast height (DBH), regardless of height.
14 15				<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
	100 =	Total Cover		Herb - All herbaceous (non-woody) plants, regardless
Woody Vine	Absolute	Dominant	Indicator	of size, and woody plants less than 3.28 ft tall.
Stratum Plot Size ( 30 ft. )	% Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in
1				height.
3				
4				Hydrophytic
5				vegetation
		= Total Cover		present? Y
Remarks: (Include photo numbers here or on a sepa	arate sheet			

SOIL

Depth	Matrix			lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Toxiaro	
0-16	10Y 3/1	100					Silty clay	
•••		•		ed Matr	ix, CS=0	Covered	or Coated Sand Grains	
	PL=Pore Lining	, M=Ma	trix					
Hydric Soi	I Indicators:		Dark O	unfana (	07)		Indicators for	Problematic Hydric Soils:
Listias	(11)		Dark Si		57) w Surfa	(\$2)	2 om Musik	(A10) (MI DA 147)
Histisol	pipedon (A2)		(MLRA			00)		(A10) ( <b>MLRA 147)</b> ie Redox (A16) <b>(MLRA 147, 148</b>
	listic (A3)				ace (S9)			Toodplain Soils (F19
	en Sulfide (A4)		(MLRA		. ,		(MLRA 136	
	ed Layers (A5)		· · · ·		Matrix (	F2)		w Dark Surface (TF12)
2 cm M	uck (A10) (LRR	N)	Deplete			,		ain in Remarks)
Deplete	ed Below Dark S	Surface	A11 Redox	Dark Su	urface (F	6)		
Thick D	ark Surface (A1	2)	Deplete	ed Dark	Surface	(F7)		
•	Mucky Mineral (				sions (F8			
	I, MLRA 147, 14						(LRR N, MLRA 136)	
	Gleyed Matrix (S	54					36, 122)	
	Redox (S5)						) MLRA 148)	
Sinppe	d Matrix (S6)				ateriai (F		RA 127, 147)	
*Indicators	of hydrophytic y	enetatio	on and wetland h	vdroloc	iv must k	ne prese	nt, unless disturbed or p	problematic
maioatoro		ogolalit		iy al olog	y maor .			
Restrictive	Layer (if observe	ed)						
Туре:					_		Hydric soil prese	nt? <u>Y</u>
Depth (inch	nes):				_			
Demeriker								
Remarks:								
Remarks:								
Remarks:								
Remarks:								

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Holloway-Knox 138 kV Trar	nsmission Line_City/County: Harris	Report Name: <u>Wetland PB-21</u> son Sampling Date: 6/11/2018
Applicant/Owner: FirstEnergy	State: Ohio	
Investigator(s): M. Thomayer, B.Otto; Jacol		nship, Range: S23 T11N R5W
Landform (hillslope, terrace, etc.): terrace	Local relief (concave	
Subregion (LRR or MLRA) LRR N	Lat.: 40.356249	Long.: -81.052299 Datum: NAD 83
Soil Map Unit Name WnE - Westmoreland-D		
Are climatic/hydrologic conditions of the site	typical for this time of the year Yes	S X No (If no, explain in remarks
Are vegetation, soil, or	hydrologysignificantly distu	rbed? Are "normal Yes
Are vegetatior, soil, or	hydrology naturally problem	natic: circumstances" present?
		(If needed, explain any answers in remark
SUMMARY OF FINDINGS		
Hydrophytic vegetation present Yes		
Hydric soil present? Yes	Is the sampled a	area within a wetland? Yes
Wetland hydrology present? Yes		
Remarks:		
Nonano.		
PEM wetland along stream within	valley in existing ROW	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requi	red; check all that apply)	Surface Soil Cracks (B6)
X Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	X Drainage Patterns (B10)
X Saturation (A3)		Moss Trim Lines (B16)
	Oxidized Rhizospheres on Living	
Water Marks (B1)	Roots (C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3)	Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Soils (C6)	Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	X Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes X	No Depth (inches):	1 Wetland
Water table present? Yes		0 hydrology
Saturation present? Yes X	No Depth (inches): sur	face present? Y
(includes capillary fringe)		
Describe recorded data (stream gauge, mor	nitoring well, aerial photos, previous ir	nspections), if available:
Remarks:		
INGINAINS.		

# **VEGETATION** - Use scientific names of plants

				Sampling Point:	W-bao-6/1	1/2018-
				50/20 Thresholds		
Tree Stratum Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		20% 5	50%
Tree StratumPlot Size (30 ft.)	Cover	Species	Status	Tree Stratum	0	0
1				Sapling/Shrub Stratum	0	0
2				Herb Stratum	22	55
				Woody Vine Stratum	0	0
				,		
5				Dominance Test Workshe	et	
3				Number of Dominant		
7				Species that are OBL,		
3				FACW, or FAC:	2	(A)
				Total Number of Dominant		_ ` `
)				Species Across all Strata:	2	(B)
	0 =	Total Cover				(=)
				Percent of Dominant		
Capling/Chruch	Abaaluta 0/	Deminant	la dia ata r	Species that are OBL,	400.000/	
Sapling/Shrub Plot Size (15 ft.)	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00%	_(A/B)
Stratum	Cover	Species	Status			
				Prevalence Index Worksh	eet	
2				Total % Cover of:		
3				OBL species 55 x 1	= 55	
4				FACW species 45 x 2	= 90	_
5				FAC species 10 x 3	= 30	_
3				FACU species 0 x 4	= 0	_
7				UPL species 0 x 5	= 0	_
3				Column totals 110 (A)	175	(B)
				Prevalence Index = $B/A$ =	1.59	_(=)
)						_
	0 =	Total Cover				
				Hydrophytic Vegetation Ir	dicators	
	Absolute %	Dominant	Indicator	X Rapid test for hydrophy		n
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%		
Leersia oryzoides	50	Y	OBL	X Prevalence index is≤3.0		
2 Juncus effusus	30	Y	FACW	Morphological adaptatio		c
3 Impatiens capensis	10	<u> </u>	FACW	supporting data in Rem		
4 Euphorbia purpurea	10	N	FAC	sheet)		separa
5 Onoclea sensibilis	5	<u> </u>	FAC	Problematic hydrophytic	vogotation	*
	5	<u> </u>	OBL		vegetation	1
6 carex lurida	5	IN	UBL	(explain)		
7				*Indicators of hydric soil and wetl		/ must be
8 9				present, unless disturbed or prob	lematic	
			·		01	
)				Definitions of Vegetation		
1				Tree - Woody plants 3 in. (7.6 cm	,	liameter
2				breast height (DBH), regardless of	of height.	
3				Sapling/shrub - Woody plants le	ss than 3 in.	DBH and
1				greater than 3.28 ft (1 m) tall.		
5	110	Total Cover				
	110 =			Herb - All herbaceous (non-wood		ardless o
	Absolute %	Dominant	Indicator	size, and woody plants less than	3.28 ft tall.	
Weedy Vine						
Woody Vine Plot Size ( 30 ft. )			Status	Woody vines - All woody vines g	greater than 3	.28 ft in
Stratum Plot Size ( 30 ft. )	Cover	Species				
Stratum Plot Size ( 30 ft. )		Species		height.		
Stratum Plot Size ( 30 π. ) 12				neight.		
Stratum Plot Size ( 30 ft. ) 1 2 3				neight.		
Stratum Plot Size ( 30 ft. )				Hydrophytic		
Stratum Plot Size ( 30 ft. ) 1 2 3 4		Species				
Stratum Plot Size ( 30 π. ) 12	Cover			Hydrophytic		
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Cover	Total Cover		Hydrophytic vegetation		
Stratum Plot Size ( 30 ft. ) 12 33 45	Cover			Hydrophytic vegetation	_	
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Cover			Hydrophytic vegetation		
Stratum Plot Size ( 30 ft. ) 12 33 45	Cover			Hydrophytic vegetation	-	
Stratum Plot Size ( 30 ft. ) 12 33 45	Cover			Hydrophytic vegetation		
Stratum Plot Size ( 30 ft. ) 12 33 45	Cover			Hydrophytic vegetation	-	
Stratum Plot Size ( 30 ft. ) 12 33 45	Cover			Hydrophytic vegetation		
Stratum Plot Size ( 30 ft. )	Cover			Hydrophytic vegetation		

SOIL

Depth	Matrix		Red	dox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Техниге	Remarks
0-16	10YR 4/1	100					Silty clay	
				ed Mati	rix, CS=0	Covered	or Coated Sand Grain	าร
	PL=Pore Lining	, ivi=ivia	trix				Indiantara fa	v Droklamatia Uvdria Caila.
Hydric Sol	I Indicators:		Dark S	urfaco (	97)		indicators to	or Problematic Hydric Soils:
Histisol	(A1)			(	ow Surfa	ce (S8)	2 cm Mu	ck (A10) ( <b>MLRA 147)</b>
	pipedon (A2)		(MLRA			()		airie Redox (A16) <b>(MLRA 147, 148</b>
	listic (A3)		Thin Da	ark Surf	ace (S9)	1		Floodplain Soils (F19
Hydrog	en Sulfide (A4)		(MLRA	147, 14	48)		(MLRA 1	
	d Layers (A5)			•	Matrix (	F2)		llow Dark Surface (TF12)
	uck (A10) (LRR		Deplete		· · ·		X Other (E>	plain in Remarks)
	ed Below Dark S				urface (F	,		
	ark Surface (A1	,			Surface	. ,		
	Mucky Mineral (	,			sions (F	,		
	l, <b>MLRA 147, 1</b> 4 Gleyed Matrix (\$						(LRR N, MLRA 136) 36, 122)	
	Redox (S5)	-					) MLRA 148)	
	d Matrix (S6)						RA 127, 147)	
	()				,	λ	, ,	
Indicators	of hydrophytic v	egetatio	on and wetland h	nydrolog	gy must l	be prese	nt, unless disturbed c	r problematic
	Layer (if observ	ed)						
Type:					_		Hydric soil pres	sent? Y
Depth (inch	ies):				-			
Remarks:								
Soils as	sumed hydri	c due t	o strong vege	etative	and hy	/drologi	ic indicators.	

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

				Vetland PB-22
Project/Site: Holloway-Knox 138 kV Transmission Line	City/County: Ha	arrison	Sampling Date 6	6/12/2018
Applicant/Owner: FirstEnergy	State: Of			V-mdt-6/12/2018-01
Investigator(s) M. Thomayer, B.Otto; Jacobs			S22 T11N R5W	
Landform (hillslope, terrace, etc.) terrace	Local relief (conca			Slope (%):
Subregion (LRR or MLRA): LRR N Lat.:		Long.: -81		Datum: NAD 83
Soil Map Unit Name WmE - Westmoreland-Coshocton co				
Are climatic/hydrologic conditions of the site typical for this	s time of the yea		(If no, ex	
Are vegetatior, soil, or hydrology _	significantly dis		e "normal circumst	ances" <u>Yes</u>
Are vegetatior, soil, or hydrology	naturally proble		esent?	
		(If i	needed, explain ar	ny answers in remarks
SUMMARY OF FINDINGS				1
Hydrophytic vegetation present' Yes				
Hydric soil present? Yes	Is the sample	d area within a v	wetland? Yes	S
Wetland hydrology present? Yes				
Remarks:				
itemarks.				
PEM wetland at toe of slope in maintained ROV	V			
·	-			
HYDROLOGY				
Wetland Hydrology Indicators:				um of two required)
Primary Indicators (minimum of one is required; check all	11.27		e Soil Cracks (B6)	
Surface Water (A1) True Aqu	atic Plants (B14)	Sparse	ly Vegetated Conca	ve Surface (B8)
	n Sulfide Odor (C1)	X Drainag	ge Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Living	gMoss T	rim Lines (B16)	
Water Marks (B1) Roots (C	3)	Dry-Sea	ason Water Table (	C2)
Sediment Deposits (B2) Presence	e of Reduced Iron (C4)	Crayfisl	h Burrows (C8)	
	on Reduction in Tilled		ion Visible on Aeria	
Algal Mat or Crust (B4) Soils (C6	)	Stunted	d or Stressed Plants	s (D1)
Iron Deposits (B5) X Thin Muc	k Surface (C7)	X Geomo	orphic Position (D2)	
Inundation Visible on Aerial Other (Ex	kplain in Remarks)	Shallow	v Aquitard (D3)	
Imagery (B7)			pographic Relief (D	4)
Water-Stained Leaves (B9)		X FAC-Ne	eutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:		Ι		
Surface water present? Yes No X	Depth (inches):		Wetland	
Water table present? Yes No X	Depth (inches):		hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	Y
(includes capillary fringe)				
	avial plastas reports - '	in an action all if	ve lle	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous i	inspections), if av	/alla	
Remarks:				
Saturated throughout with some surface flow				

## **VEGETATION** - Use scientific names of plants

				Sampling Point:	W-mdt-6/12/2018-0
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		200/ 500/
Tree Stratum Plot Size ( 30 ft. )				<b>T</b> 01 1	20% 50%
	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	35 88
3				Woody Vine Stratum	0 0
4				Woody vino oracam	0 0
				Dominance Test Workshe	-4
5					el
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	1 (A)
9				Total Number of Dominant	
10				Species Across all Strata:	2 (B)
10				Species Across an Strata.	<u> </u>
	0 =	Total Cover		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	50.00% (A/B)
				FACW, OFFAC.	<u> </u>
Stratum	Cover	Species	Status		
1				Prevalence Index Worksho	eet
2				Total % Cover of:	
					70
3				OBL species 70 x 1	
4				FACW species 25 x 2	
5				FAC species 0 x 3	= 0
6				FACU species 0 x 4	
7				UPL species 0 x 5	
				· · · · · · · · · · · · · · · · · · ·	
8					120 (B)
9				Prevalence Index = B/A =	1.26
10					
	0 =	<ul> <li>Total Cover</li> </ul>			
				Hydrophytic Vegetation In	dicators:
	Abaaluta 0/	Deminant	Indiantar		
Herb Stratum Plot Size ( 5 ft.	Absolute %	Dominant	Indicator	Rapid test for hydrophy	
, , , , , , , , , , , , , , , , , , , ,	Cover	Species	Status	Dominance test is >50%	0
1 Poa sp.	80	Y		X Prevalence index is≤3.0	)*
2 Carex vulpinoidea	30	Y	OBL	Morphological adaptation	
			OBL	supporting data in Rem	
3 Scirpus atrovirens	20	<u>N</u>			arks of on a separate
4 Impatiens capensis	15	N	FACW	sheet)	
5 Symplocarpus foetidus	10	N	OBL	Problematic hydrophytic	vegetation*
6 Carex lurida	10	N	OBL	(explain)	
7 Onoclea sensibilis	10	N	FACW	*Indicators of hydric soil and wetl	and hydrology must be
8			17.00		
				present, unless disturbed or prob	lematic
9					
10				Definitions of Vegetation	Strata:
11				Tree - Woody plants 3 in. (7.6 cm	) or more in diameter
12					
				at breast height (DBH), regardles	s of neight.
13				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
14				greater than 3.28 ft (1 m) tall.	
15				5	
	175 =	<ul> <li>Total Cover</li> </ul>	_	Herb - All herbaceous (non-wood	w) plants regardless of
				size, and woody plants less than	
				size and woody plants less than	
Woody Vine		Dominant	Indicator	elize, alla needy plante leee than	5.20 It tall.
Woody Vine Plot Size(30 ft.)	Absolute %	Dominant	Indicator		
Woody Vine Plot Size(30 ft.) Stratum		Dominant Species	Indicator Status	Woody vines - All woody vines g	
Plot Size ( 30 ff	Absolute %				
Stratum Plot Size ( 30 ft. )	Absolute %			Woody vines - All woody vines of	
Stratum Plot Size ( 30 ft. )	Absolute % Cover			Woody vines - All woody vines of	
Stratum Plot Size ( 30 ft. )	Absolute % Cover			Woody vines - All woody vines g height.	
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Absolute % Cover			Woody vines - All woody vines of height.	
Stratum Plot Size ( 30 ft. )	Absolute % Cover			Woody vines - All woody vines g height.	
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Absolute % Cover			Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Absolute % Cover	Species		Woody vines - All woody vines of height.	
Stratum         Plot Size (30 ft.)           1	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum Plot Size ( 30 ft. ) 1 2 3 4	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1         2           2         3           4         5	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1         2           2         3           4         5	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1         2           2         3           4         5	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1         2           2         3           4         5	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1         2           2         3           4         5	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	
Stratum         Plot Size (30 ft.)           1	Absolute % Cover	Species		Woody vines - All woody vines of height. Hydrophytic vegetation	

SOIL

Sampling Point: W-mdt-6/12/2018-01

Depth	cription: (Describ Matrix			dox Fea			Text		Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	lure	Remarks
0-12	10YR 3/1	100					silty clay		
	oncentration, D=	-Doploti	on PM-Poduco	d Matrix		worod or	Contod San	d Graine	
	PL=Pore Lining,	•			, 03=00	wereu ui	Coaleu San	u Grains	
		ivi–iviati					أمصا	aatara far F	rehlematic Hydric Cailor
nyaric Sol	Indicators:		Dark Si	urface (S	37)		inai	cators for F	Problematic Hydric Soils:
Histisol	(A1)			· · ·	w Surfac	e (S8)		2 cm Muck (	(A10) ( <b>MLRA 147)</b>
	pipedon (A2)			147, 14		- ()			e Redox (A16) <b>(MLRA 147, 148)</b>
	listic (A3)				áce (S9)				oodplain Soils (F19
	en Sulfide (A4)		(MLRA	147, 14	8)			(MLRA 136	
	d Layers (A5)			,	Matrix (F	2			w Dark Surface (TF12
	uck (A10) <b>(LRR</b>			d Matrix			X	Other (Expla	ain in Remarks
	ed Below Dark Su				rface (F6	,			
	ark Surface (A12				Surface	• •			
-	Mucky Mineral (S			•	ions (F8	,			
<u> </u>	l, MLRA 147, 14	,					LRR N, MLR	A 136)	
	Gleyed Matrix (S Redox (S5)	4			e (F13) <b>(N</b>		MLRA 148)		
	d Matrix (S6)					· · ·	A 127, 147)		
Outppe							A 127, 147)		
*Indicators	of hydrophytic ve	getation	n and wetland hy	drology	must be	present	, unless distu	urbed or prol	olem
		0		0,		•	-	•	
	Layer (if observe	d)							
Type:	):				-		Hydric	soil preser	it? <u>Y</u>
Depth (inch	es):				-				
Remarks:									
. containto.									
Soile co	ourod budria	duc to	etropa voacto	tive or	d bydra		adioatora		
	sumed nvufic	นนย เ0	strong vegeta	uve af	iu riyarc	JUGIC II	iuicators.		
00115 03	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0 0		•	-			

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

	Report Name Wetland PB-23
Project/Site: Holloway-Knox 138 kV Transmission Line	
Applicant/Owner: FirstEnergy	State: Ohio Sampling Point: W-mdt-6/12/2018-02
Investigator(s) M. Thomayer, B.Otto; Jacobs	Section, Township, Range S22 T11N R5W
Landform (hillslope, terrace, etc.) terrace	Local relief (concave, convex, none) <u>concave</u> Slope (%):
Subregion (LRR or MLRA): LRR N Lat.: Soil Map Unit Name WmE - Westmoreland-Coshocton co	
Are climatic/hydrologic conditions of the site typical for this	s time of the yea Yes X No (If no, explain in remarks
Are vegetation , soil , or hydrology	significantly disturbed? Are "normal circumstances" Yes
Are vegetatior, soil, or hydrology	naturally problematic present?
· · · · · · · · · · · · · · · · · · ·	(If needed, explain any answers in remarks
SUMMARY OF FINDINGS	
Hydrophytic vegetation present Yes	
Hydric soil present? Yes	Is the sampled area within a wetland? Yes
Wetland hydrology present? Yes	
Remarks:	
Nemarks.	
PEM wetland at toe of slope in maintained ROV	W.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	
	uatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	en Sulfide Odor (C1) X Drainage Patterns (B10)
	Rhizospheres on LivingMoss Trim Lines (B16)
Water Marks (B1) Roots (C	
	e of Reduced Iron (C4) Crayfish Burrows (C8)
	Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	
	ck Surface (C7) X Geomorphic Position (D2)
	xplain in Remarks)
Imagery (B7)	X Microtopographic Relief (D4)
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)
Aquatic Fauna (B13)	
Field Observations:	
Surface water present? Yes X No	Depth (inches):1 Wetland
Water table present? Yes <u>No X</u>	
Saturation present? Yes X No	Depth (inches): 0 present? Y
(includes capillary fringe)	
Describe recorded data (stream gauge, monitoring well, a	perial nhotos, previous inspections), if availa
beschbe recorded data (stream gauge, monitoring weil, a	
Remarks:	
Saturated throughout with some surface flow/in	nundation

## **VEGETATION** - Use scientific names of plants

			<u> </u>	Sampling Point:	W-mdt-6/12/2018-02
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		20% 50%
Tree Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Tree Stratum	0 0
1	00101	Opeolog	Olaldo		0 0
1				Sapling/Shrub Stratum	
2	·			Herb Stratum	25 63
3				Woody Vine Stratum	0 0
4					
5				Dominance Test Workshe	et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	3 (A)
9				Total Number of Dominant	
10				Species Across all Strata:	3 (B)
	0 =	Total Cover			( )
				Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub Plot Size ( 15 ft. )	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksh	eet
	· <u> </u>				
2	·			Total % Cover of:	00
3	·			OBL species 80 x 1	
4				FACW species 45 x 2	
5				FAC species 0 x 3	
6	·			FACU species <u>0</u> x 4	
7	·			UPL species 0 x 5	
8				Column totals 125 (A)	
9				Prevalence Index = B/A =	1.36
10					
	0 =	Total Cover			
				Hydrophytic Vegetation Ir	dicators:
	Absolute %	Dominant	Indicator	X Rapid test for hydrophy	
Herb Stratum Plot Size ( 5 ft. )	Cover	Species	Status	X Dominance test is >50%	
A lasmis en maides		•			
1 Leersia oryzoides	50	<u>Y</u>	OBL	X Prevalence index is≤3.0	
2 Onoclea sensibilis	20	Y	FACW	Morphological adaptation	
3 Symplocarpus foetidus	20	Y	OBL	supporting data in Rem	arks or on a separate
4 Impatiens capensis	15	N	FACW	sheet)	
5 Juncus effusus	10	N	FACW	Problematic hydrophytic	c vegetation*
6 Carex lurida	5	N	OBL	(explain)	-
7 Carex vulpinoidea	5	N	OBL	*Indicators of hydric soil and wet	and hydrology must be
8				present, unless disturbed or prob	
9				problem, unloss distarbed of pro-	iomatio
				Definitions of Veretation	Strata:
10	·			Definitions of Vegetation	Strata:
11			·	Tree - Woody plants 3 in. (7.6 cr	n) or more in diameter
12	. <u> </u>			at breast height (DBH), regardles	s of height.
13	. <u> </u>			Sapling/shrub - Woody plants lo	ess than 3 in DRH and
14				greater than 3.28 ft (1 m) tall.	
15				greater than 5.20 it (1 iii) tall.	
	125 =	Total Cover		Herb - All herbaceous (non-woo	dv) plants regardless of
				size, and woody plants less than	
Woody Vine	Absolute %	Dominant	Indicator	size, and woody plants less than	J.20 IL Idii.
Stratum Plot Size ( 30 ft. )	Cover	Species	Status	Woody vines - All woody vines	graatar than 2 20 ft in
	00701	Openico	Olalas		greater than 5.20 it in
1	·			height.	
2	·				
3					
4				Hydrophytic	
5				vegetation	
	0 =	Total Cover		present? Y	
					-
Remarks: (Include photo numbers here or on a sepa	ate sheet				
incontanto. (moluce prioto numbers nere or oll a sepa					

SOIL

Depth	Matrix			dox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-14	10YR 4/1	98	10YR 3/3	2	С	PL	silty clay	
Type: C=C	Concentration D	-Depletic	n RM-Reduce	d Matrix	CS=Co	vered or	Coated Sand Grains	
	PL=Pore Lining,				, 00-00		Could Cana Chains	
	I Indicators:						Indicators for	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy (LRR N Sandy Sandy Strippe	pipedon (A2) listic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) <b>(LRR</b> ed Below Dark S Dark Surface (A1 Mucky Mineral (S I, <b>MLRA 147, 14</b> Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	urface (A 2) S1) 8 <b>)</b> S4	Thin Da (MLRA Loamy X Deplete 11 Redox Deplete Redox Iron-Ma Umbric Piedmo Red Pa	147, 14 Gleyed d Matrix Dark Su d Dark Su d Dark Su Depress unganes Surface nt Flood rent Ma	ace (S9) <b>8)</b> Matrix (F (F3) rface (F6) Surface e Masse e (F13) ( <b>N</b> dplain So terial (F2)	6) (F7 <u>)</u> s (F12)   <b>/ILRA 13</b> /IIS (F19) 21) <b>(MLR</b> .	Piedmont (MLRA 13 Very Shall Other (Exp LRR N, MLRA 136)	ow Dark Surface (TF12 blain in Remarks
Restrictive Type: Depth (inch	Layer (if observe les):	ed)			-		Hydric soil prese	ent? <u>Y</u>
						1		
emarks:								
emarks:								
emarks:								

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

		Report Name	
Project/Site: Holloway-Knox 138 kV Transmission L			te 6/12/2018
Applicant/Owner: FirstEnergy	State: Ohi	Sampling Pol	int: W-mdt-6/12/2018-03
Investigator(s) M. Thomayer, B.Otto; Jacobs Landform (hillslope, terrace, etc. terrace	Local relief (concave	wnship, Range S21 T11N R e, convex, none concave	Slope (%):
	at.: 40.329959	Long.: -81.061079	Datum: NAD 83
Soil Map Unit Name RcB - Richland silt loam, 2 to 6 per		NWI Classification: <u>N</u>	
Are climatic/hydrologic conditions of the site typical for t	his time of the yea Y	es X No (If no	o, explain in remarks
Are vegetatior, soil, or hydrology	significantly dist	turbed? Are "normal circu	imstances" Yes
Are vegetation, soil, or hydrology	naturally proble		in any answers in remarks
SUMMARY OF FINDINGS			
Hydrophytic vegetation present Yes			
Hydric soil present? Yes	Is the sampled	area within a wetland?	Yes
Wetland hydrology present? Yes		_	
Remarks:			
PEM wetland at toe of slope and adjacent to	intermittent stream in r	maintained ROW.	
HYDROLOGY Wetland Lludalary Indiantara		0	ning of the second second
Wetland Hydrology Indicators:		Secondary Indicators (mi	• •
Primary Indicators (minimum of one is required; check a		Surface Soil Cracks (B	
	quatic Plants (B14)	Sparsely Vegetated Co	
	gen Sulfide Odor (C1)	X Drainage Patterns (B1	
X Saturation (A3) Oxidiz	ed Rhizospheres on Living	Moss Trim Lines (B16)	)
Water Marks (B1) X Roots		Dry-Season Water Tat	· ·
	nce of Reduced Iron (C4)	Crayfish Burrows (C8)	
	t Iron Reduction in Tilled	Saturation Visible on A	0,00
Algal Mat or Crust (B4) Soils (		Stunted or Stressed Pl	
	luck Surface (C7)	X Geomorphic Position (	
	(Explain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		X Microtopographic Relie	· · /
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes X No	Depth (inches):	1 Wetland	
Water table present? Yes No	X Depth (inches):	hydrology	N.
Saturation present? Yes X No	Depth (inches):	0 present?	<u> </u>
(includes capillary fringe)			
Describe recorded data (stream gauge, monitoring well	, aerial photos, previous in	spections), if availa	
Remarks:			
Saturated throughout with some surface flow/	inundation. Likely rece	eives flood water periodica	ally.
	-		

## **VEGETATION** - Use scientific names of plants

							50/20 Thresholds	
Tree Stratum	Plot Size (	30 ft.	)	Absolute %	Dominant	Indicator		20% 50%
			,	Cover	Species	Status	Tree Stratum	0 0
							Sapling/Shrub Stratum	0 0
							Herb Stratum	27 68
					. <u> </u>		Woody Vine Stratum	0 0
							Dominance Test Workshe	et
							Number of Dominant	
							Species that are OBL,	<b>2</b> (A)
							FACW, or FAC:	(A)
			<u> </u>				Total Number of Dominant Species Across all Strata:	2 (B)
				0 =	Total Cover		Percent of Dominant	( ' /
							Species that are OBL,	
Sapling/Shrub Stratum	Plot Size (	15 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	<u>100.00%</u> (A/B
							Prevalence Index Worksho	eet
							Total % Cover of:	
							OBL species 85 x 1	
							FACW species 50 x 2	
							FAC species 0 x 3	
							FACU species 0 x 4	
							UPL species 0 x 5	
							Column totals 135 (A)	
							Prevalence Index = B/A =	1.37
				0 =	Total Cover			
				Absolute %	Dominant	Indicator	Hydrophytic Vegetation In X Rapid test for hydrophyt	
Herb Stratum	Plot Size (	5 ft.	)	Cover	Species	Status	$\frac{X}{X}$ Dominance test is >50%	
Carex Iurida				55	Ϋ́Υ	OBL	X Prevalence index is≤3.0	
Carex vulpinoide	a			30	Y	OBL	Morphological adaptatio	
Juncus effusus				15	<u> </u>	FACW	supporting data in Rema	
Impatiens caper	sis			15	<u> </u>	FACW	sheet)	
Onoclea sensibi				10	N	FACW	Problematic hydrophytic	vegetation*
Eupatorium perf				10	<u> </u>	FACW	(explain)	rogotation
Eupatonampon	onatam			10		TAON		
							*Indicators of hydric soil and wetl present, unless disturbed or prob	
							Definitions of Vegetation S	Strata:
					·		Tree - Woody plants 3 in. (7.6 cm	
							at breast height (DBH), regardles	
							Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	ess than 3 in. DBH ar
				135 =	Total Cover		Herb - All herbaceous (non-wood	tv) plants regardless
Moody Vinc					Dominant	Indicator	size, and woody plants less than	
Woody Vine Stratum	Plot Size (	30 ft.	)	Absolute % Cover	Dominant Species	Indicator Status	Woody vines - All woody vines of	reater than 3 28 ft in
							height.	
					. <u></u>			
					<u> </u>		Hydrophytic	
							vegetation	
				=	<ul> <li>Total Cover</li> </ul>		present? Y	_
marks: (Include pho	to numbers he	re or on a s	eparat	te sheet			<u> </u>	

SOIL

		dox Feat			Texture	Remarks		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	O an aba alaya	
0-14	10YR 4/1	85	10YR 4/4	15	С	PL/M	Sandy clay	
T		Deviation						<u> </u>
	PL=Pore Lining,			d Matrix	, CS=Co	overed or	Coated Sand Grains	
	I Indicators:	ivi–iviati					Indicators for	Problematic Hydric Soils:
yane ooi	malcators.		Dark S	urface (S	S7)		indicators for	riobicinatic riyaric cons.
Histisol	· · /		,		w Surfac	e (S8)		(A10) ( <b>MLRA 147)</b>
	pipedon (A2)		```	147, 14	,			rie Redox (A16) <b>(MLRA 147, 14</b>
	listic (A3) en Sulfide (A4)			ark Surfa 147, 14	ace (S9)		(MLRA 13	Floodplain Soils (F19
	ed Layers (A5)				Matrix (F	2		ow Dark Surface (TF12)
2 cm M	uck (A10) (LRR		X Deplete	ed Matrix	(F3)			lain in Remarks
	ed Below Dark S	•			rface (Fe			
	ark Surface (A1	,			Surface	. ,		
	Mucky Mineral (\$ I, <b>MLRA 147, 14</b>	,			ions (F8 o Masso		LRR N, MLRA 136)	
	Gleyed Matrix (S					/LRA 13		
	Redox (S5)		Piedmo	nt Flood	dplain Sc	oils (F19)	MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) <b>(MLR</b>	A 127, 147)	
Indicators	of bydrophytic y	agetation	and wetland by	drology	must be	nrecent	, unless disturbed or pr	oblem
nuicators		egetation		arology	mustbe	present		obiem
	Layer (if observe	ed)						
<sup>-</sup> ype: Depth (inch	es):				-		Hydric soil prese	ent? <u>Y</u>
					-			
						-		
Remarks:								
emarks:								
emarks:								

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

			Report Name Wetland PB-25
Project/Site: Holloway-Knox 138 kV Transm	ission Line City/County:	Harrison	Sampling Date 6/12/2018
Applicant/Owner: FirstEnergy	State:		Sampling Point: W-mdt-6/12/2018-04
Investigator(s) M. Thomayer, B.Otto; Jacobs		, Township, Range	
Landform (hillslope, terrace, etc.) terrace		icave, convex, none	
Subregion (LRR or MLRA): LRR N	Lat.: <u>40.328459</u>	Long.: -81	
Soil Map Unit Name Or - Orrville silt loam, 0 to 3	s percent slopes, occasionally		lassification: N/A
Are climatic/hydrologic conditions of the site typi	cal for this time of the yea	Yes <u>X</u> No	(If no, explain in remarks
Are vegetation , soil , or hyde	drology significantly	disturbed? Are	e "normal circumstances" Yes
Are vegetatior , soil , or hyde	drology naturally pr		esent?
		(If ı	needed, explain any answers in remarl
SUMMARY OF FINDINGS			
Hydrophytic vegetation present Yes			
Hydric soil present? Yes	Is the sam	pled area within a w	wetland? Yes
Wetland hydrology present? Yes			
Remarks:			
<b>DEM</b> watland in floodalain in maintaina			
PEM wetland in floodplain in maintaine			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is required;	check all that apply)	-	e Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)		ly Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		ge Patterns (B10)
X Saturation (A3)			rim Lines (B16)
Water Marks (B1)	Oxidized Rhizospheres on Liv		
Sediment Deposits (B2)	Roots (C3) Presence of Reduced Iron (C		ason Water Table (C2) h Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tille	· · · ·	ion Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)		l or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)		rphic Position (D2)
	Other (Explain in Remarks)		Aquitard (D3)
Inundation Visible on Aerial			
Imagery (B7)			pographic Relief (D4)
Water-Stained Leaves (B9)			eutral Test (D5)
Aquatic Fauna (B13)			
Field Observations:			
· · · · · · · · · · · · · · · · · · ·	No X Depth (inches):		Wetland
· · · · · · · · · · · · · · · · · · ·	No X Depth (inches):		hydrology
	No Depth (inches):	0	present? Y
(includes capillary fringe)			
Describe recorded data (stream gauge, monitori	na well aerial photos, provio	us inspections) if ou	zaila
Describe recorded data (Stream gauge, Moniton	ng wen, aenai photos, previo		alla
Remarks:			
Saturated through 80% of wetland			
Catalated anough 0070 of wellahu			

#### **VEGETATION** - Use scientific names of plants

				Sampling Point:	W-mdt-6/12/2018-04
				50/20 Thresholds	
	Absolute %	Dominant	Indicator		200/ 500/
Tree Stratum Plot Size ( 30 ft. )	Cover				20% 50%
	Cover	Species	Status	Tree Stratum	0 0
1				Sapling/Shrub Stratum	0 0
2				Herb Stratum	23 58
3				Woody Vine Stratum	0 0
4				Woody Villo Oradam	0 0
4		·		Dominance Test Workshe	-1
o					et
6				Number of Dominant	
7				Species that are OBL,	
8				FACW, or FAC:	2 (A)
9				Total Number of Dominant	
		·		Species Across all Strata:	3 (B)
10				Species Across all Strata.	<u> </u>
	=	<ul> <li>Total Cover</li> </ul>		Percent of Dominant	
				Species that are OBL,	
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC:	66.67% (A/B)
				FACW, OF FAC.	00.07 % (A/B)
Stratum	Cover	Species	Status		
1				Prevalence Index Worksho	eet
2				Total % Cover of:	
					10
3	·			OBL species <u>10</u> x 1	
4				FACW species 85 x 2	
5				FAC species 0 x 3	= 0
6				FACU species 0 x 4	= 0
7				UPL species 0 x 5	
/					
0				Column totals 95 (A)	<u>180</u> (B)
9				Prevalence Index = B/A =	1.89
10					
	0 =	<ul> <li>Total Cover</li> </ul>			
				Hydrophytic Vegetation In	dicators:
	Absolute %	Dominant	Indicator	Rapid test for hydrophyt	
Herb Stratum Plot Size ( 5 ft. )					
	Cover	Species	Status	X Dominance test is >50%	
1 Phalaris arundinacea	35	Y	FACW	X Prevalence index is≤3.0	*
2 Juncus effusus	20	Y	FACW	Morphological adaptatic	ns* (provide
3 Carex sp.	20	Y		supporting data in Rema	
4 Agrimonia parviflora	15	<u>N</u>	FACW	sheet)	
5 Solidago gigantea	15	<u>N</u>	FACW	Problematic hydrophytic	vegetation*
6 Scirpus atrovirens	10	N	OBL	(explain)	
7				*Indicators of hydric soil and wetl	and hydrology must be
8				present, unless disturbed or prob	
9				present, unless disturbed of prob	lomatio
	·				
10				Definitions of Vegetation S	Strata:
11				Tree - Woody plants 3 in. (7.6 cm	n) or more in diameter
12				at breast height (DBH), regardles	
13			·		°
14				Sapling/shrub - Woody plants le	ess than 3 in. DBH and
45				greater than 3.28 ft (1 m) tall.	
15	115 =	Total Cover			
				Herb - All herbaceous (non-wood	
		<b>D</b>		size, and woody plants less than	3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute %	Dominant	Indicator		
Stratum	Cover	Species	Status	Woody vines - All woody vines g	reater than 3.28 ft in
1				height.	,
2					
~					
3				1	
4				Hydrophytic	
5				vegetation	
		Total Cover		-	
	=	i otal Cover		present? Y	-
Remarks: (Include photo numbers here or on a separa	ate sheet				

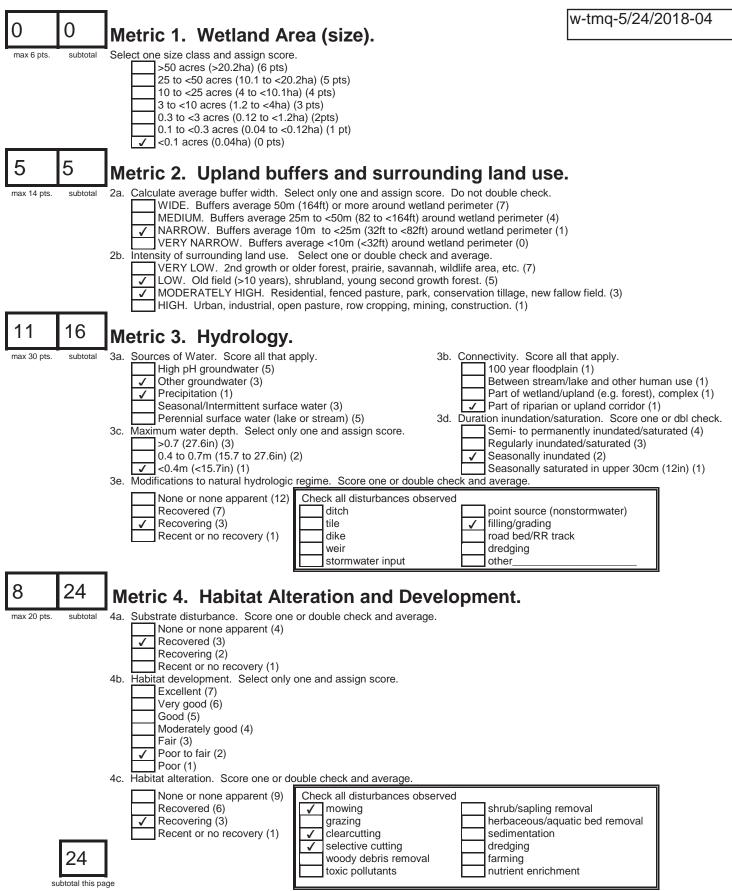
SOIL

Depth	Matrix		· ·	dox Fea		Indicator	or confirm the absence	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 5/2	90	10YR 4/6	10	С	М	silty clay loam	
		•		d Matrix	, CS=Co	vered or	Coated Sand Grains	
	PL=Pore Lining,	N=Mati	1X					
Hydric Soi	Indicators:		Dark Su	urfago (S	87)		Indicators to	r Problematic Hydric Soils:
Histisol	(A1)			· ·	w Surfac	e (S8)	2 cm Muc	k (A10) ( <b>MLRA 147)</b>
	pipedon (A2)		(MLRA			0 (00)		airie Redox (A16) <b>(MLRA 147, 148)</b>
	listic (A3)		`		ace (S9)			Floodplain Soils (F19
Hydrog	en Sulfide (A4)		(MLRA				(MLRA 1	
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2		llow Dark Surface (TF12)
	uck (A10) <b>(LRR</b> I		X Deplete		<b>x</b> - <i>i</i>		Other (Ex	plain in Remarks
	d Below Dark Su				Irface (F6	,		
	ark Surface (A12	'	·		Surface	· ·		
•	Mucky Mineral (S	,			sions (F8	,		
	, MLRA 147, 14		Iron-Ma	inganes	e Masse	s (F12) I	LRR N, MLRA 136)	
	Gleyed Matrix (S	4			e (F13) <b>(N</b>			
	Redox (S5) d Matrix (S6)				•	· · ·	MLRA 148) A 127, 147)	
Outppe							A 127, 147)	
Indicators	of hydrophytic ve	getatior	n and wetland hy	drology	must be	present	, unless disturbed or p	roblem
Pootriative	over (if cheering	d)						
Restrictive   Type:	Layer (if observe	u)					Hydric soil pres	ent? Y
Depth (inch	es):				-		riyano son pres	
I (	/				-			
Remarks:								

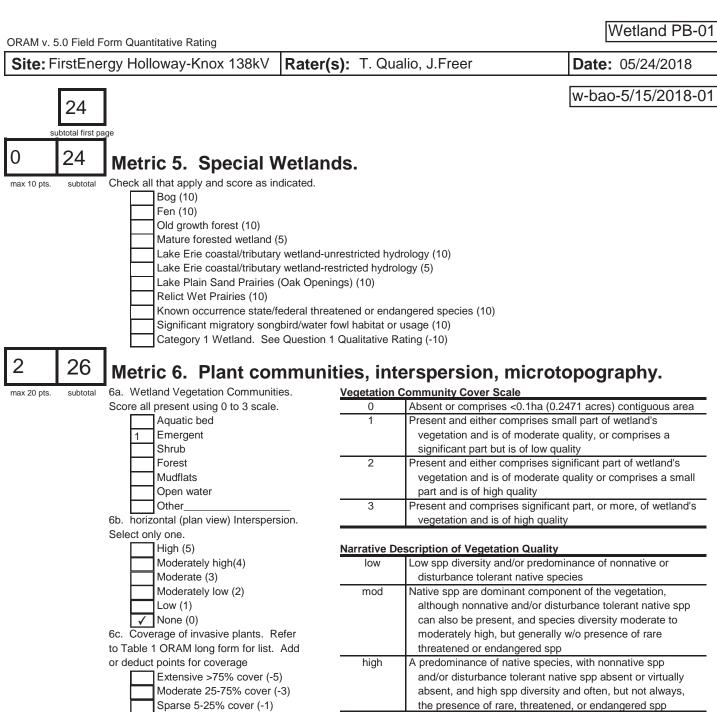
Appendix B OEPA ORAM Datasheets Site: FirstEnergy Holloway-Knox 138kV

 Wetland PB-01

 Rater(s): T. Qualio, J.Freer
 Date: 05/24/2018



last revised 1 February 2001 jjm

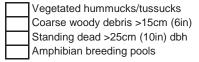


#### Nearly absent <5% cover (0) Absent (1)

6d. Microtopography.

✓

Score all present using 0 to 3 scale.



#### 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

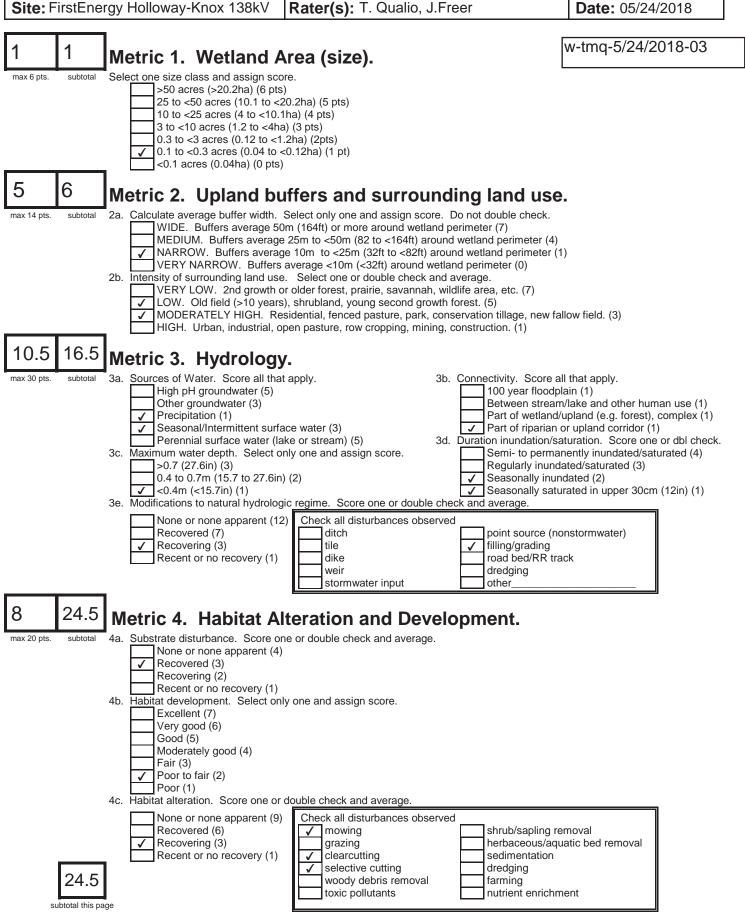
#### Microtopography Cover Scale

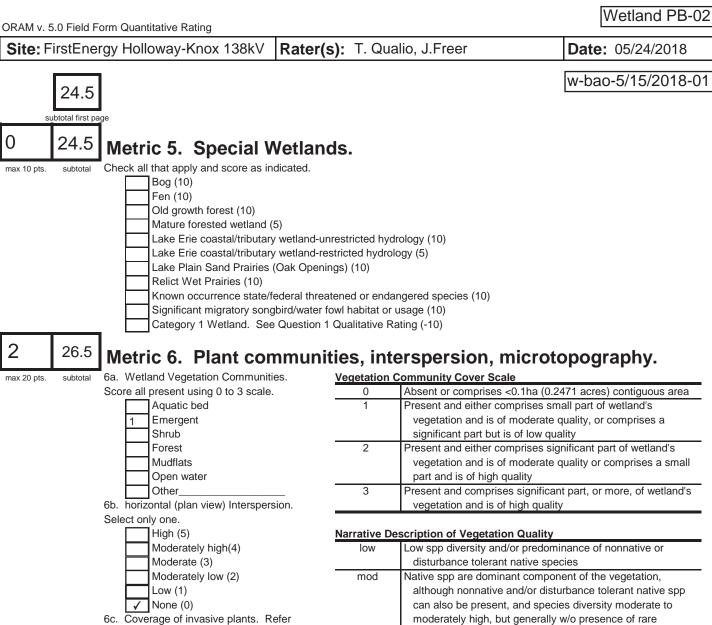
0	Absent
1	Present very small amounts or if more common
	of marginal quality
2	Present in moderate amounts, but not of highest
	quality or in small amounts of highest quality
3	Present in moderate or greater amounts
	and of highest quality

# 26 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 05/24/2018



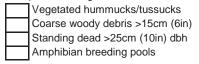


to Table 1 ORAM long form for list. Add or deduct points for coverage



6d. Microtopography.

Score all present using 0 to 3 scale.



Microtopography	Cover	Scale	

Mudflat and Open Water Class Quality

high

0

1

2

3

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

threatened or endangered spp

Absent <0.1ha (0.247 acres)

High 4ha (9.88 acres) or more

Low 0.1 to <1ha (0.247 to 2.47 acres)

Moderate 1 to <4ha (2.47 to 9.88 acres)

A predominance of native species, with nonnative spp

and/or disturbance tolerant native spp absent or virtually

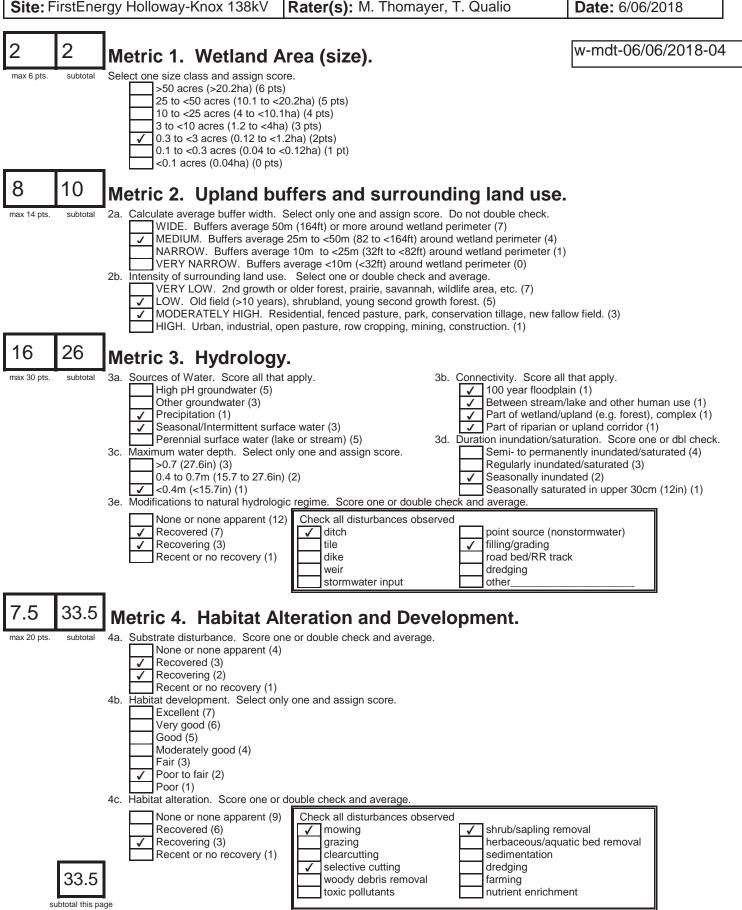
absent, and high spp diversity and often, but not always,

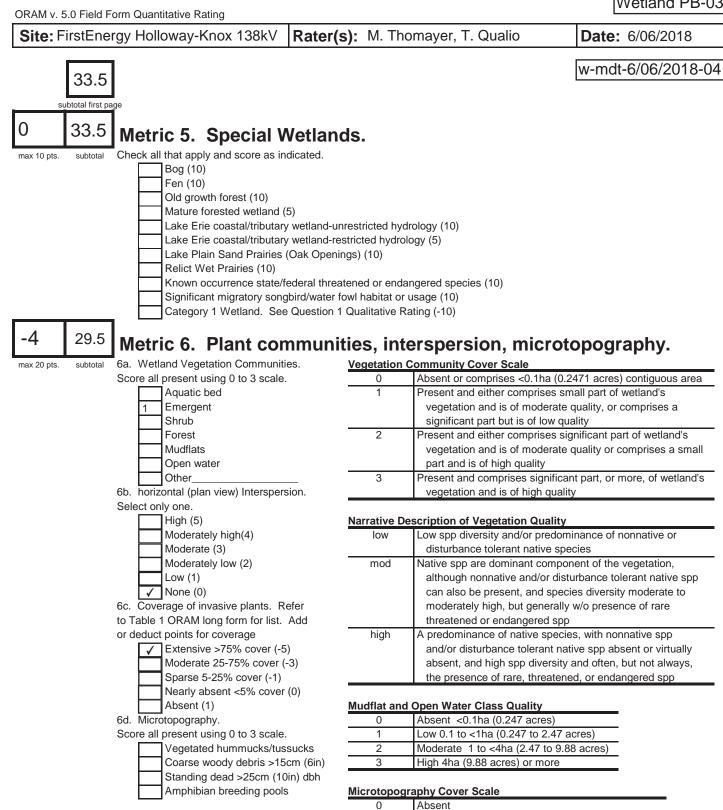
the presence of rare, threatened, or endangered spp

# 26.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/06/2018





29.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

Present very small amounts or if more common

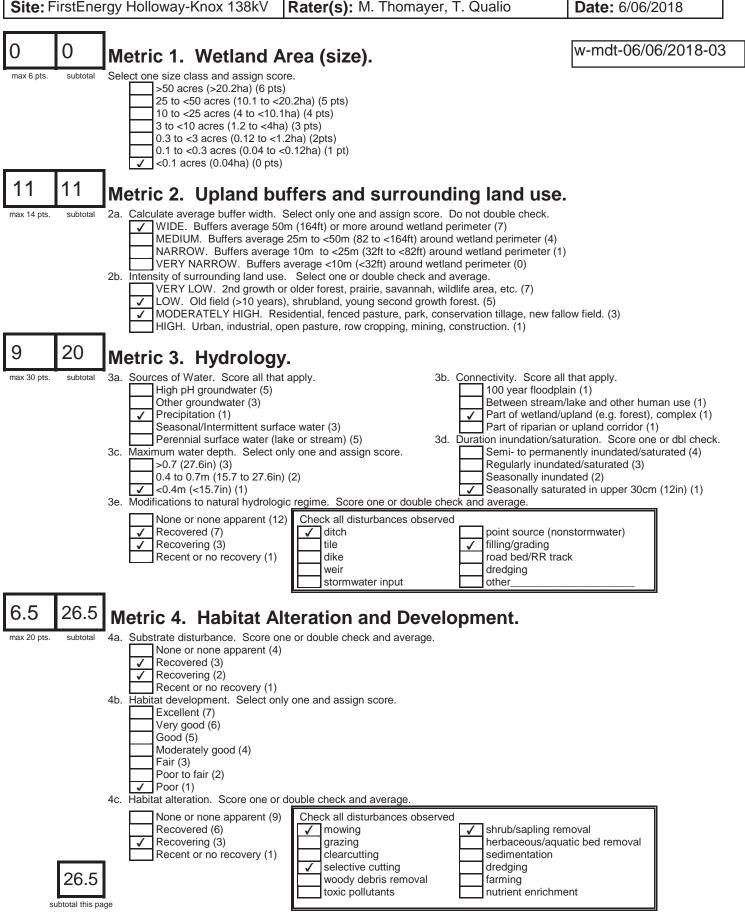
Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

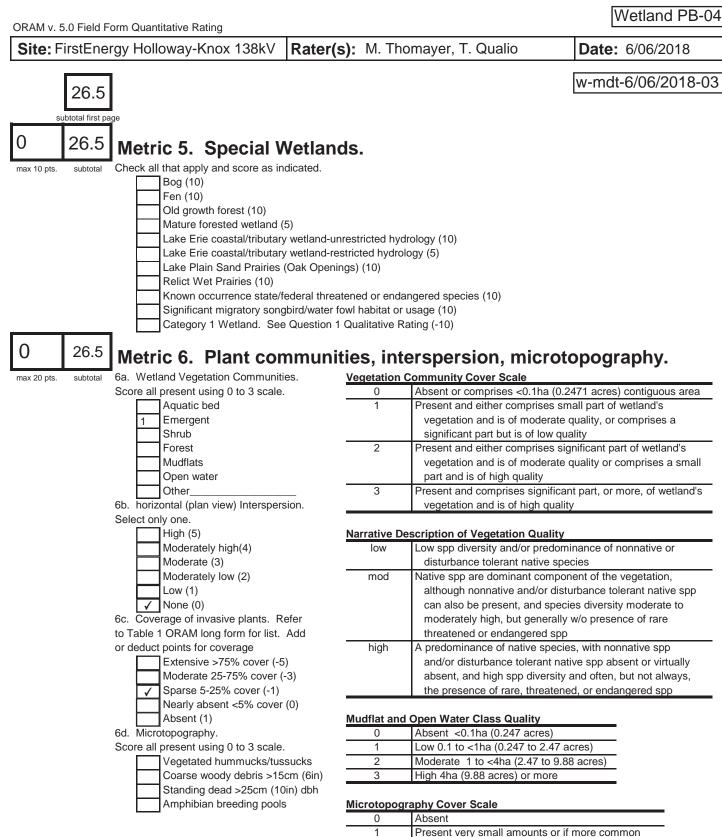
of marginal quality

and of highest quality

Date: 6/06/2018



last revised 1 February 2001 jjm



26.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

3

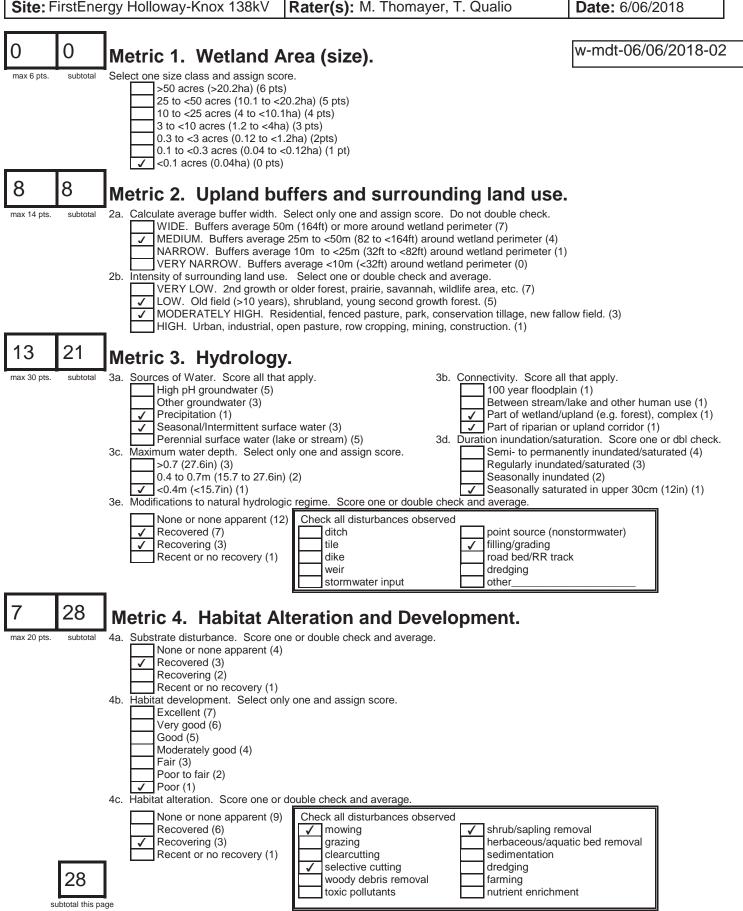
of marginal quality

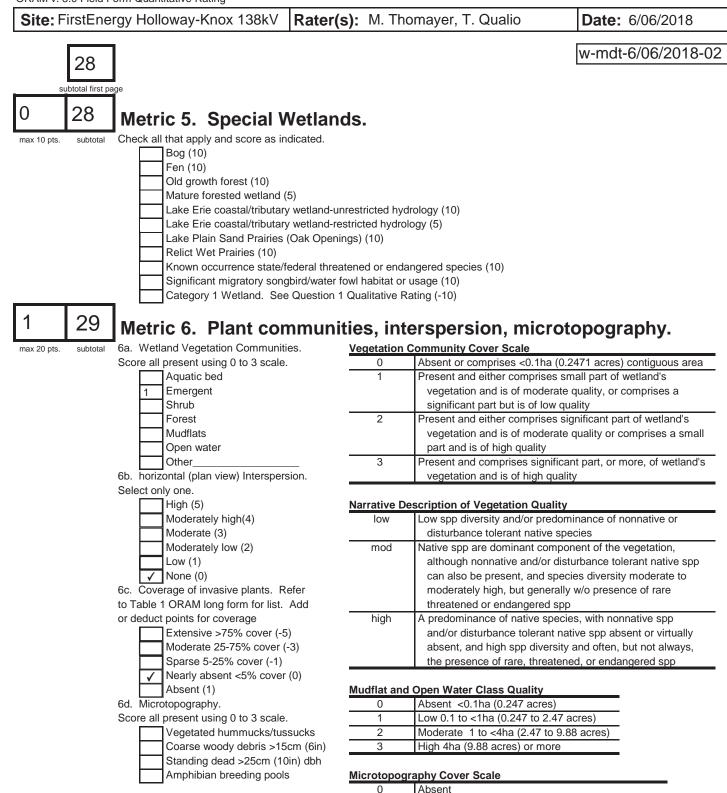
and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

Date: 6/06/2018



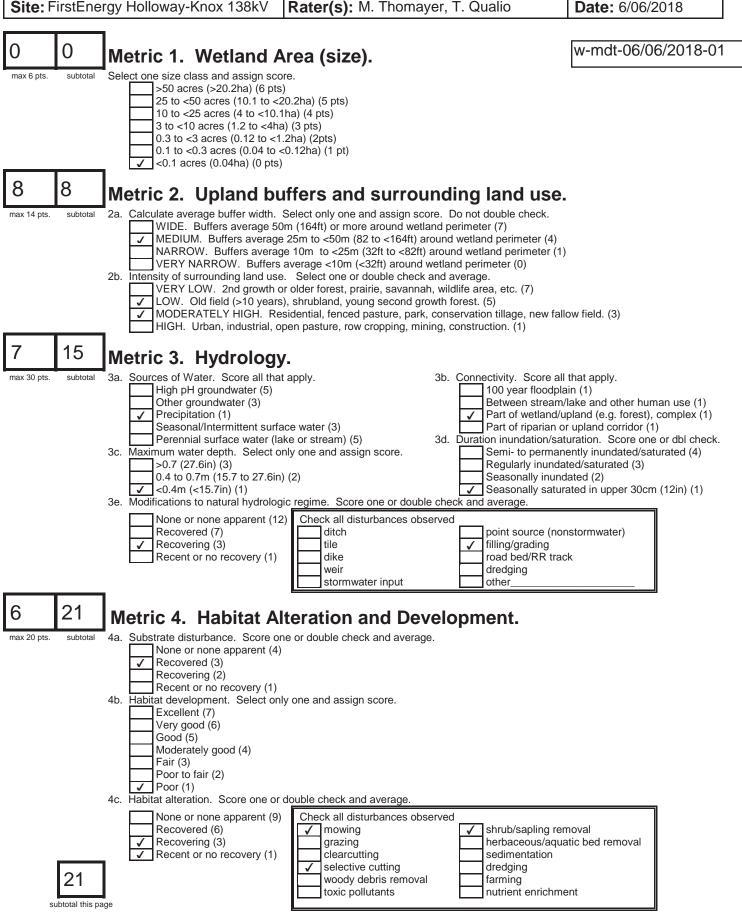


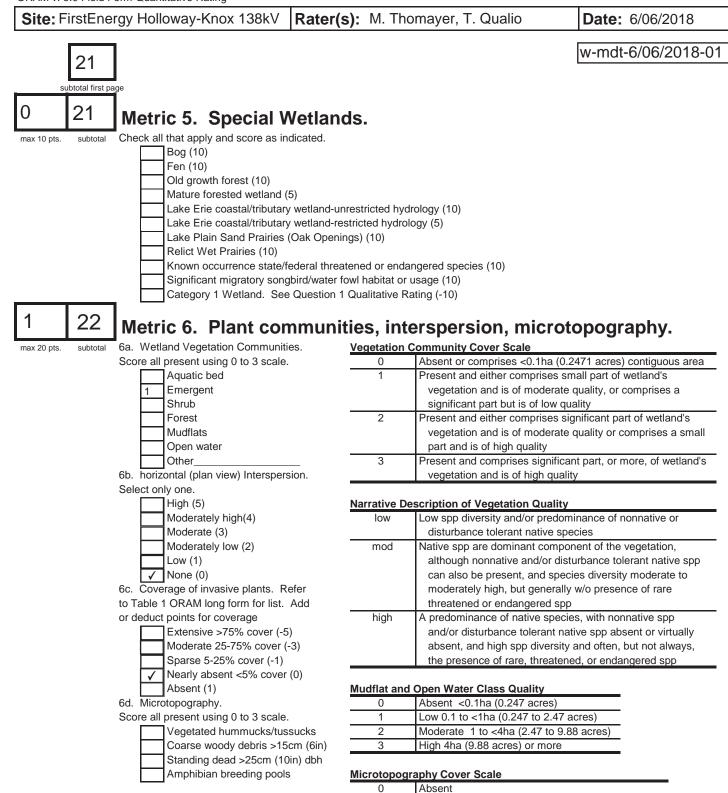
1	Present very small amounts or if more common
	of marginal quality
2	Present in moderate amounts, but not of highest
	quality or in small amounts of highest quality
3	Present in moderate or greater amounts
	and of highest quality

# 29 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/06/2018





22 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

Present very small amounts or if more common

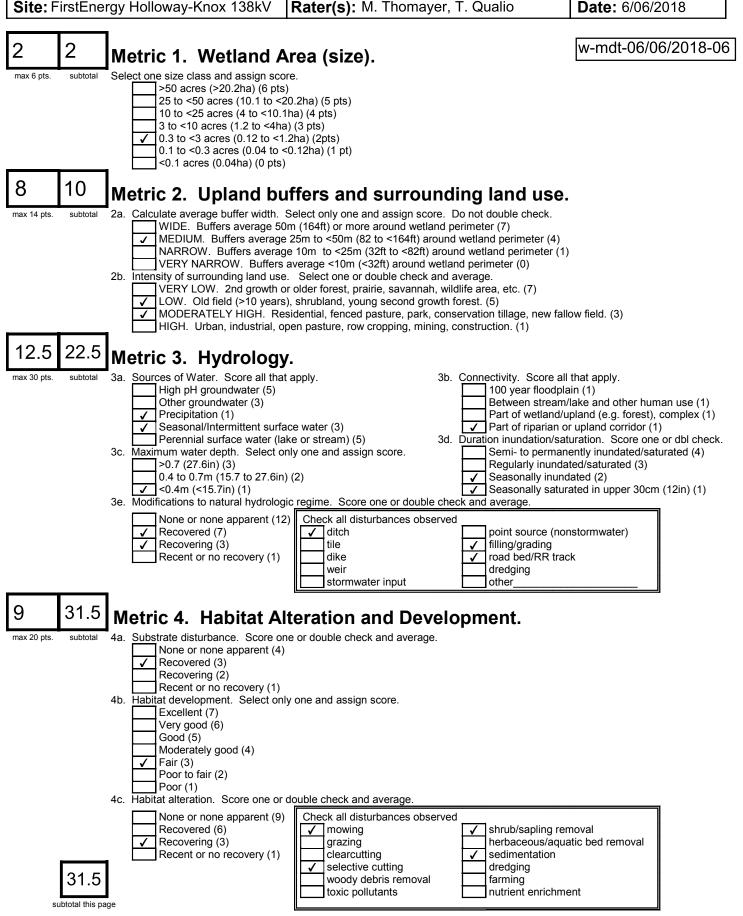
Present in moderate amounts, but not of highest quality or in small amounts of highest quality

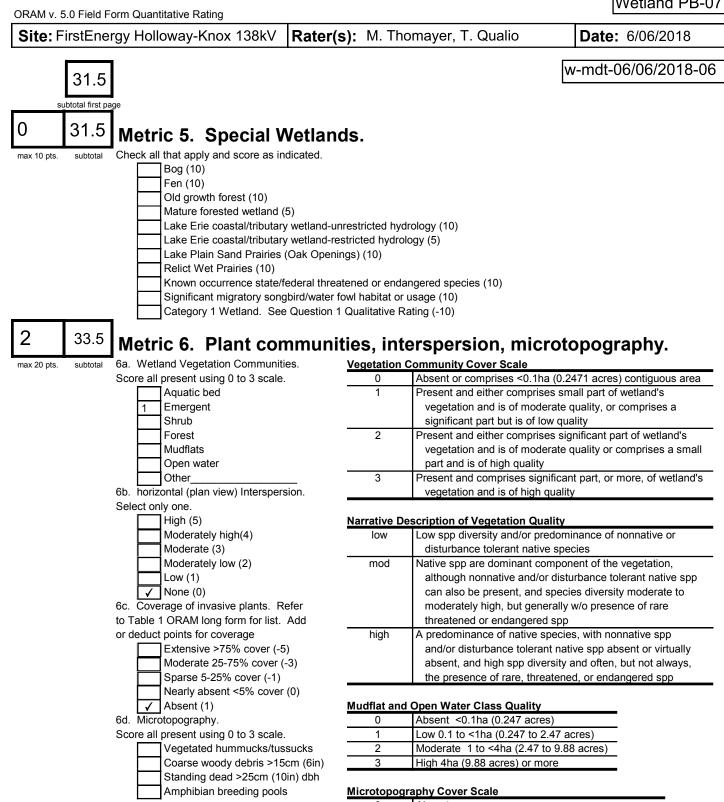
Present in moderate or greater amounts

of marginal quality

and of highest quality

Date: 6/06/2018





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

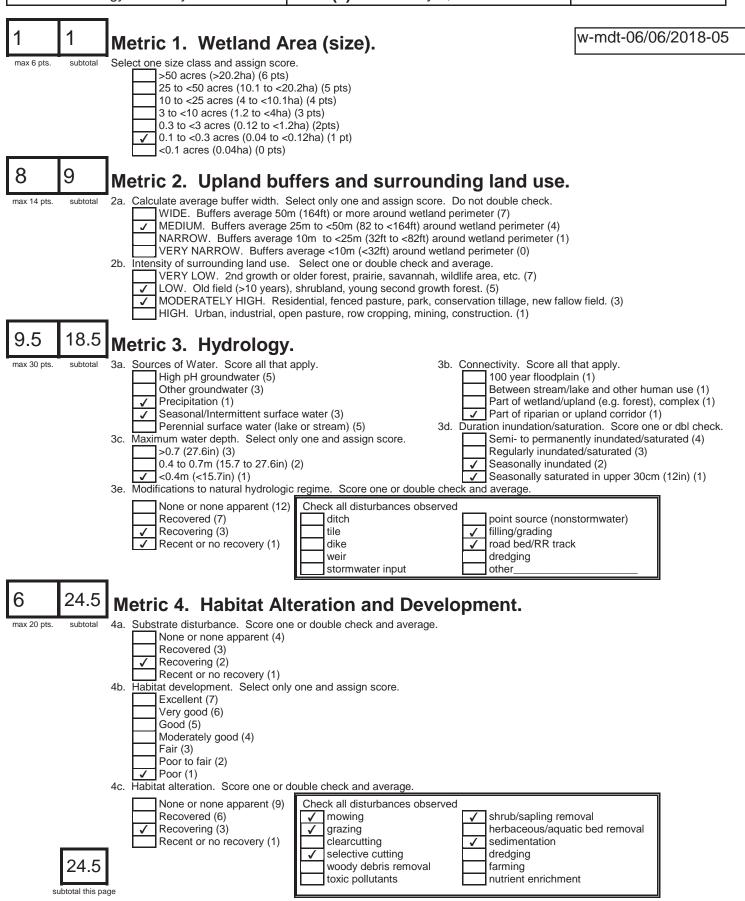
#### 33.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Site: FirstEnergy Holloway-Knox 138kV

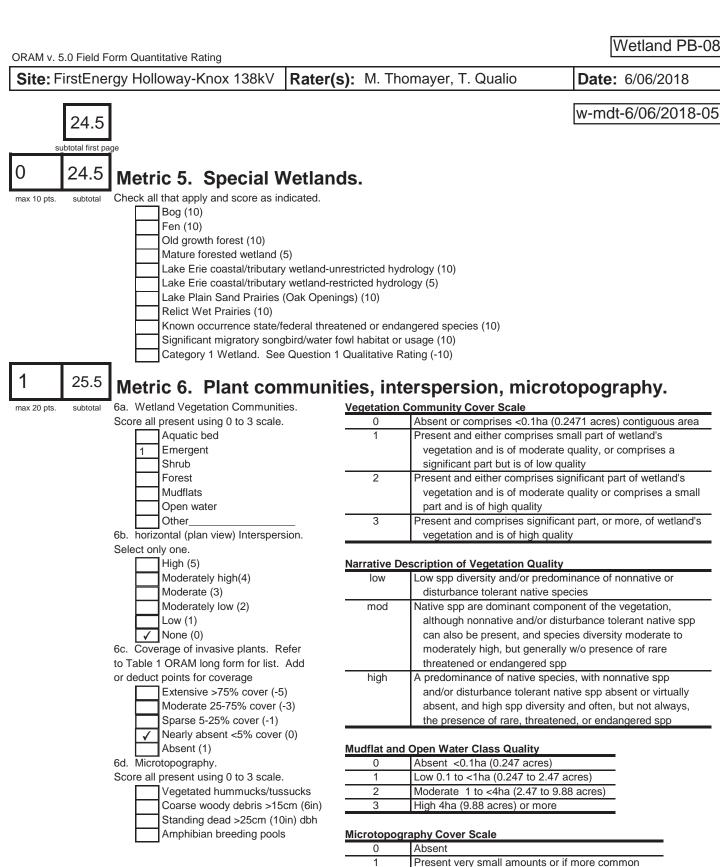
Wetland PB-08

Date: 6/06/2018



Rater(s): M. Thomayer, T. Qualio

last revised 1 February 2001 jjm



25.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

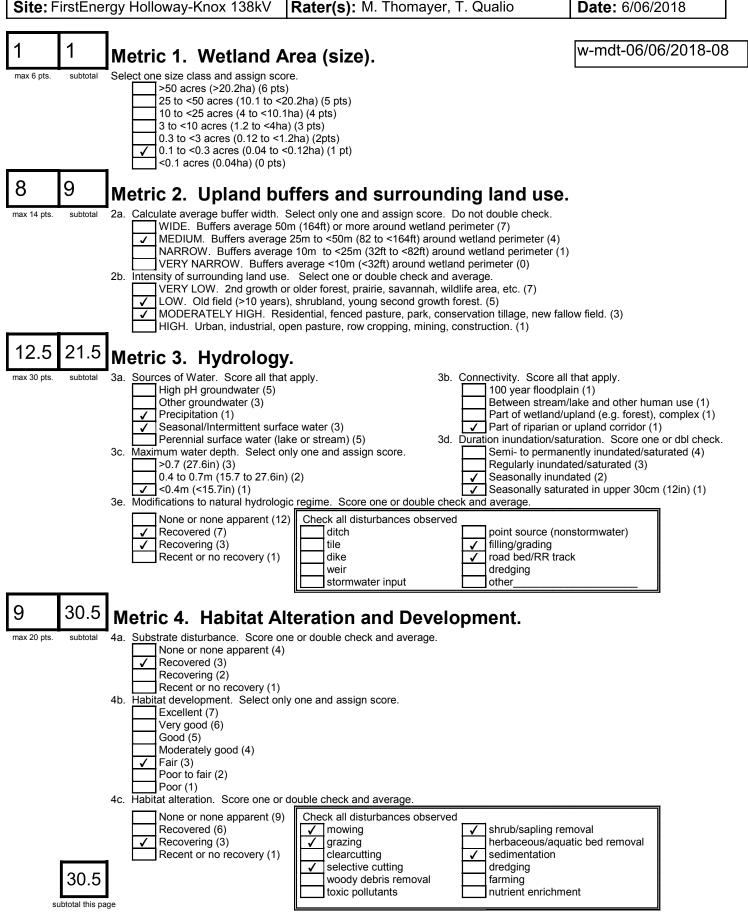
3

of marginal quality

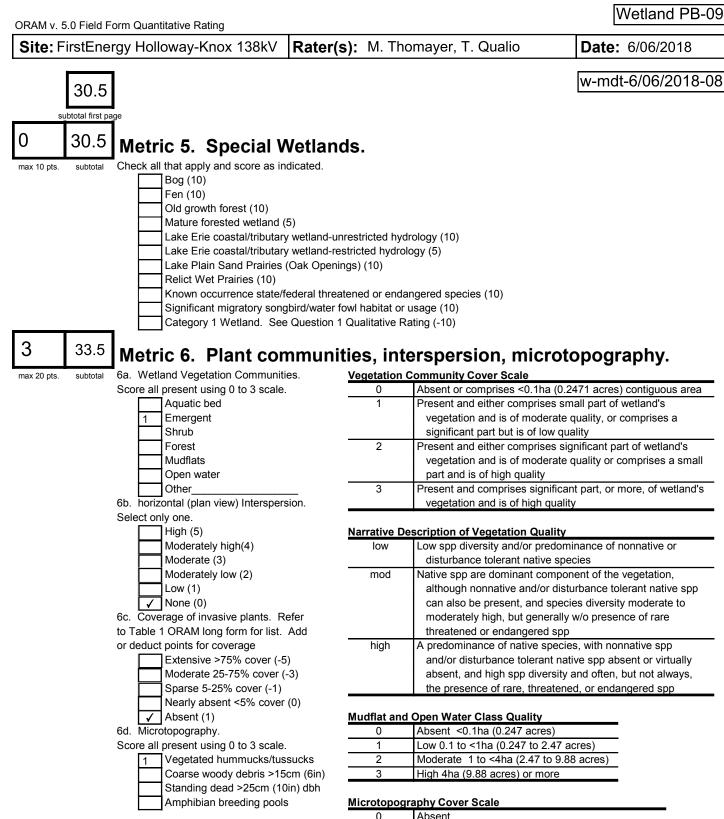
and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts



last revised 1 February 2001 jjm

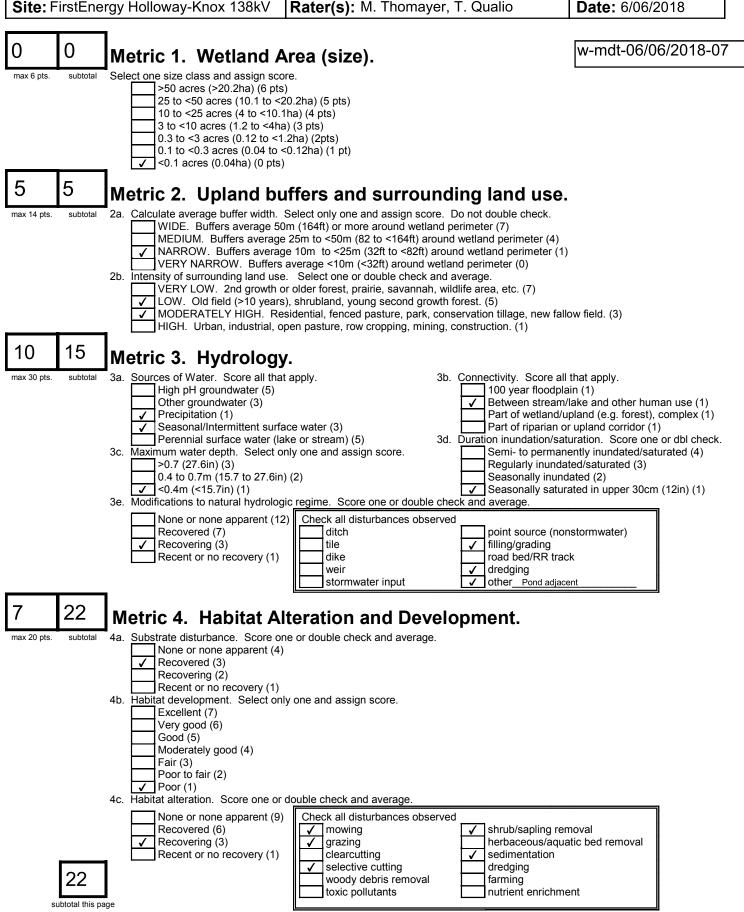


0	Abbent
1	Present very small amounts or if more common
	of marginal quality
2	Present in moderate amounts, but not of highest
	quality or in small amounts of highest quality
3	Present in moderate or greater amounts
	and of highest quality

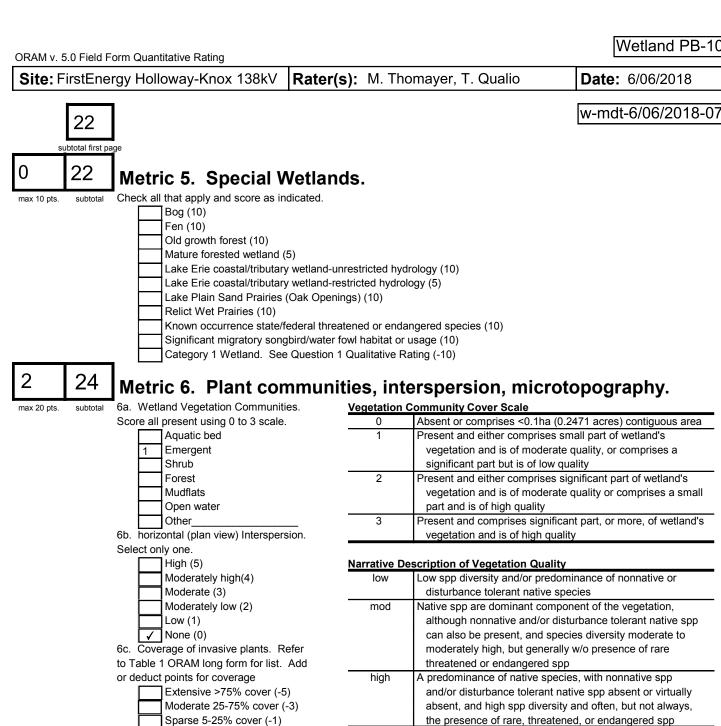
# 33.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/06/2018



last revised 1 February 2001 jjm



## 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	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			

#### 24 GRAND TOTAL (max 100 pts)

Nearly absent <5% cover (0)

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

Absent (1)

Score all present using 0 to 3 scale.

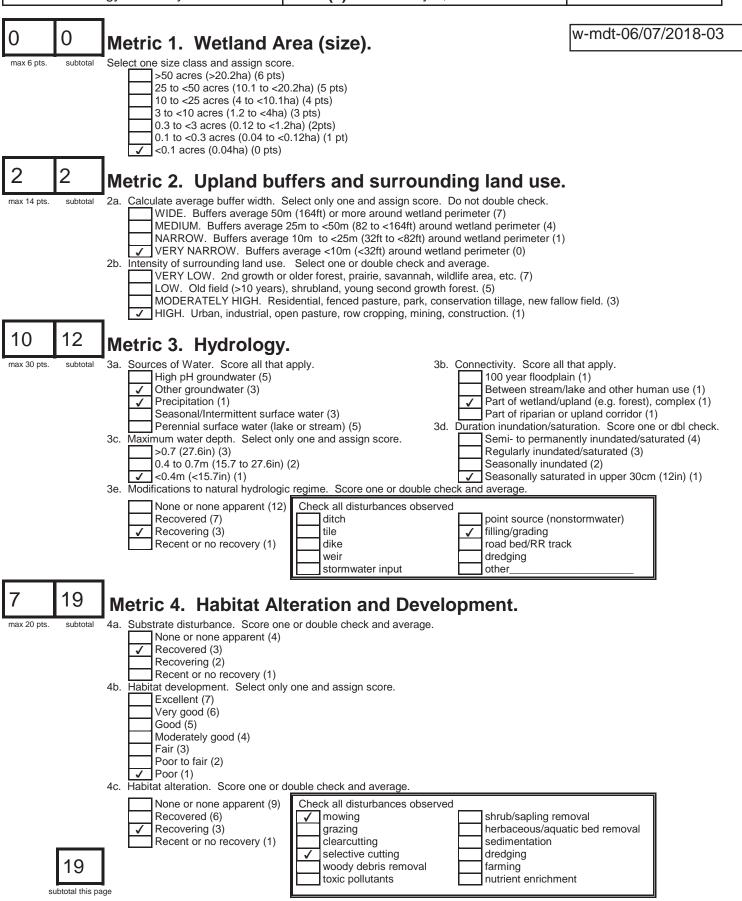
✓ 6d. Microtopography.

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

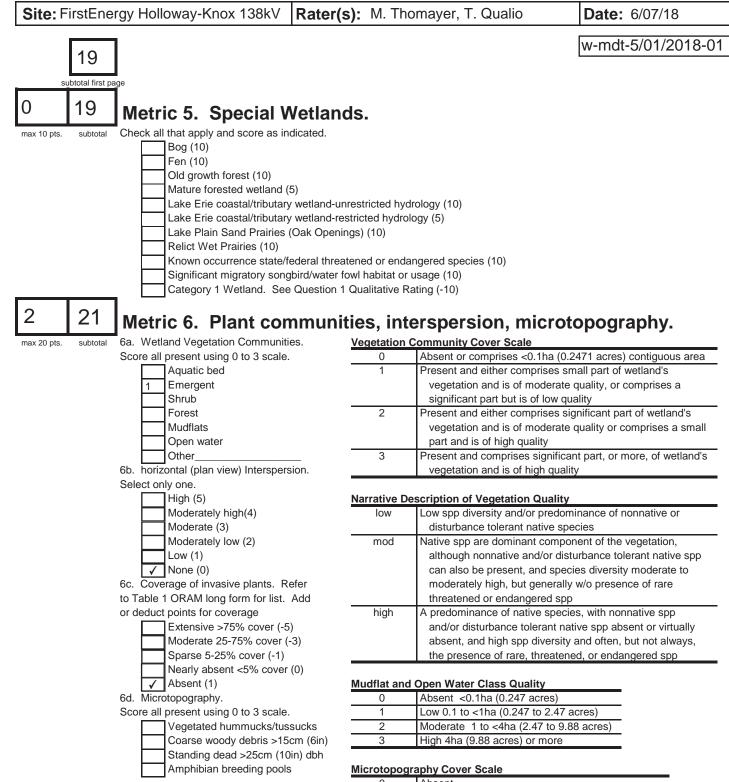
Site: FirstEnergy Holloway-Knox 138kV

Wetland PB-11

Date: 6/07/18



Rater(s): M. Thomayer, T. Qualio



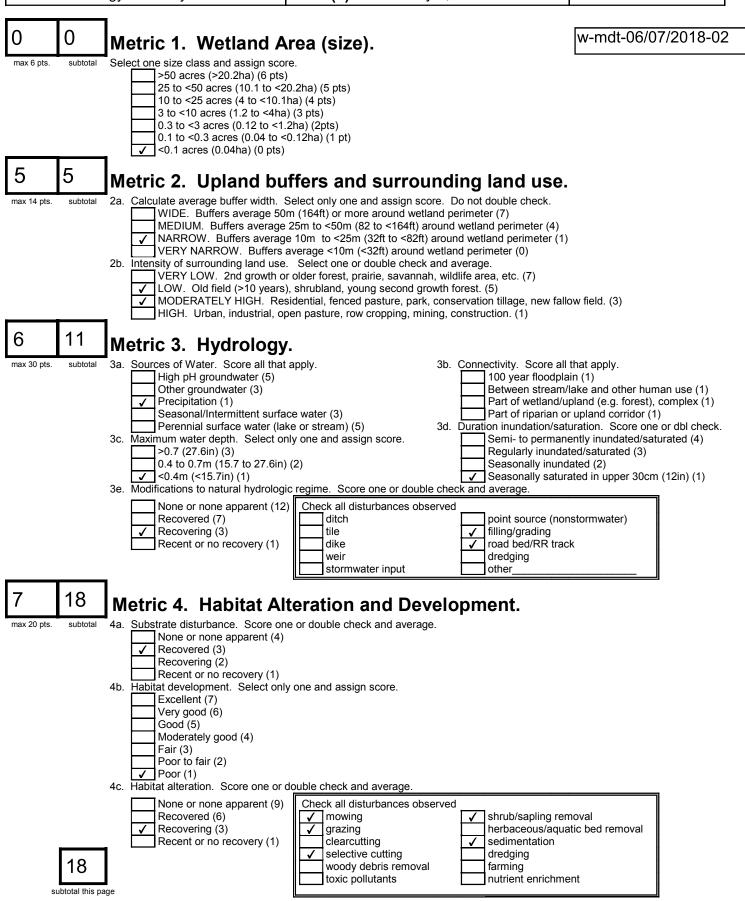
0	Absent			
1	Present very small amounts or if more common			
	of marginal quality			
2	Present in moderate amounts, but not of highes			
	quality or in small amounts of highest quality			
3	Present in moderate or greater amounts			
	and of highest quality			

21 GRAND TOTAL (max 100 pts)

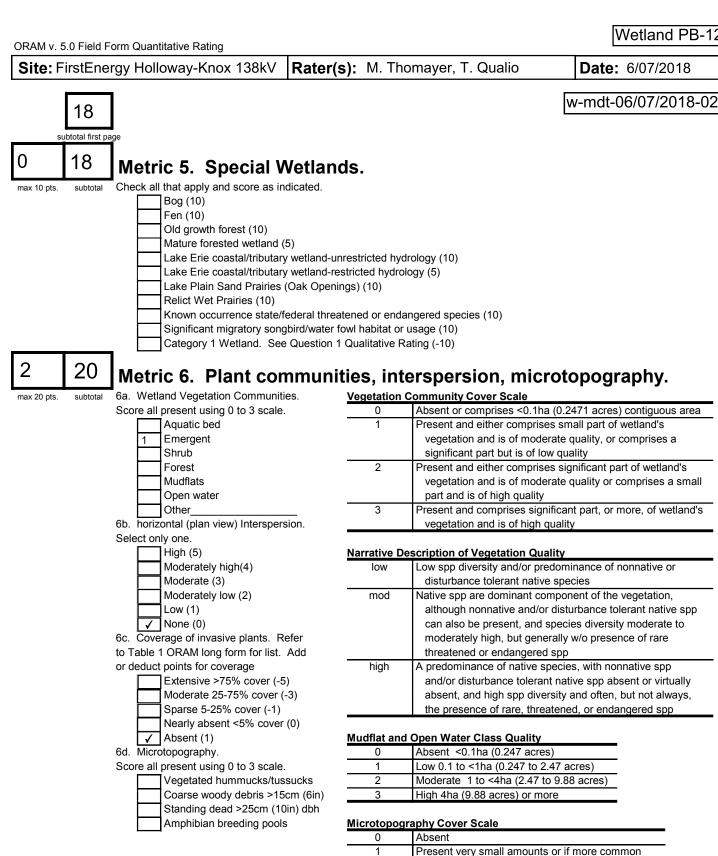
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Site: FirstEnergy Holloway-Knox 138kV

Date: 6/07/2018



Rater(s): M. Thomayer, T. Qualio



20 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

of marginal guality

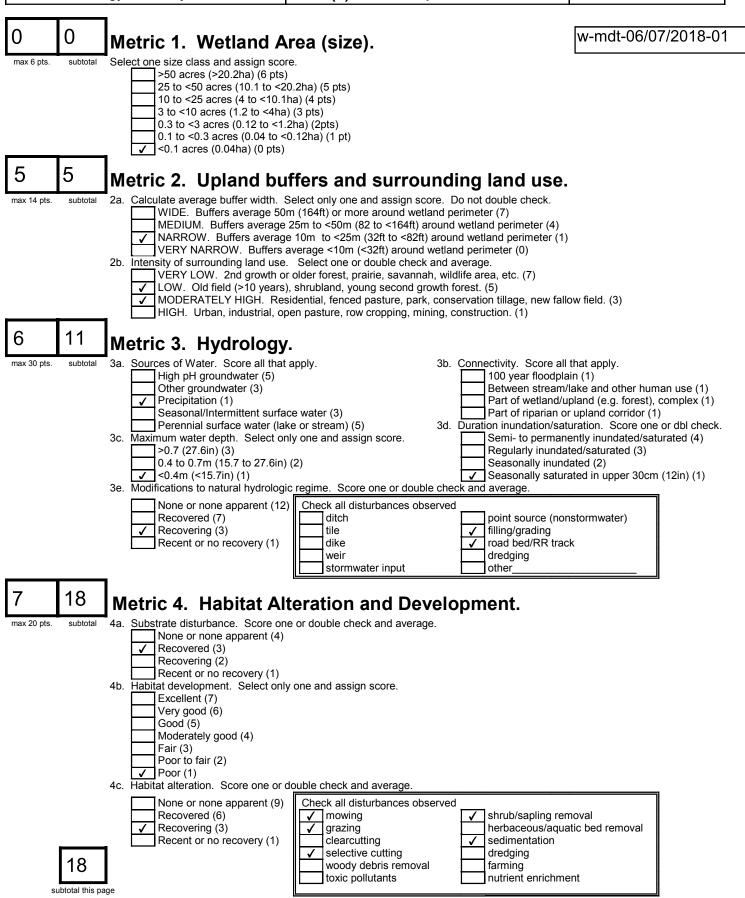
and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

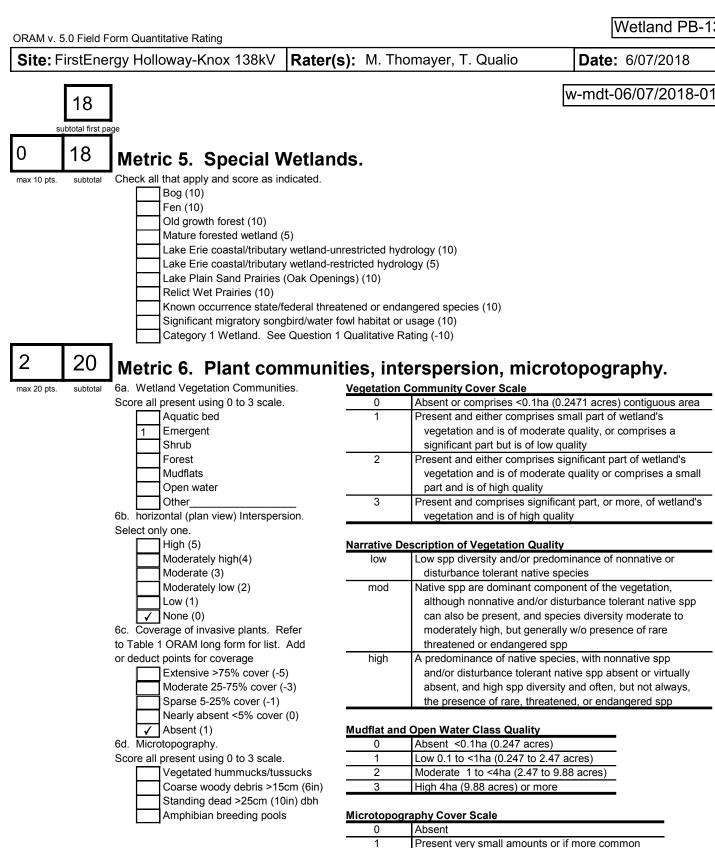
Present in moderate or greater amounts

Site: FirstEnergy Holloway-Knox 138kV

Date: 6/07/2018



Rater(s): M. Thomayer, T. Qualio



## 20 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

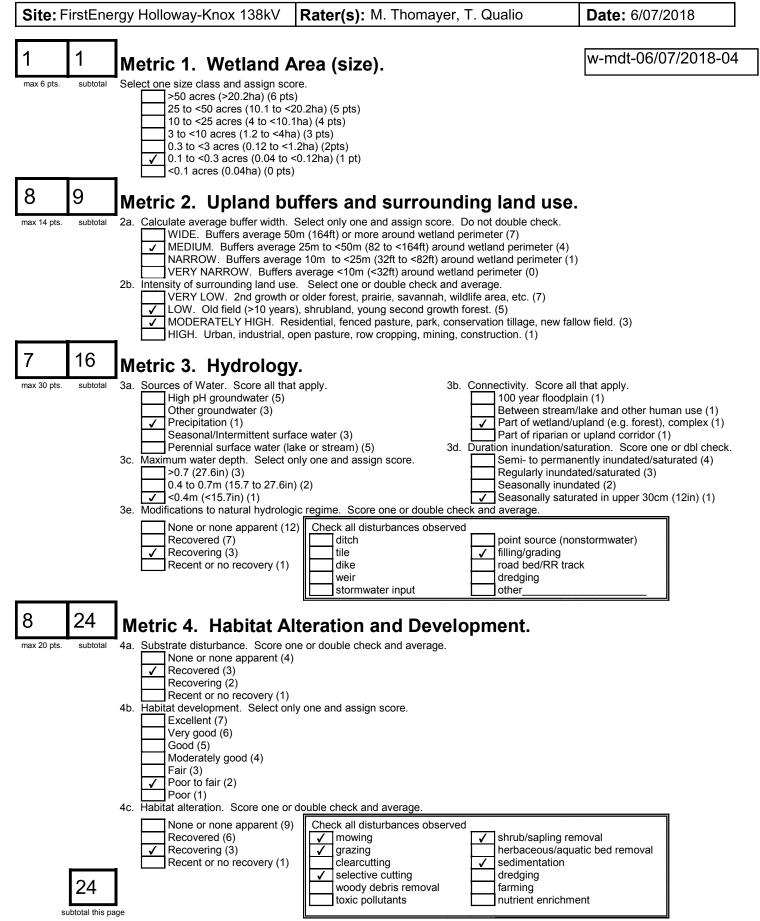
3

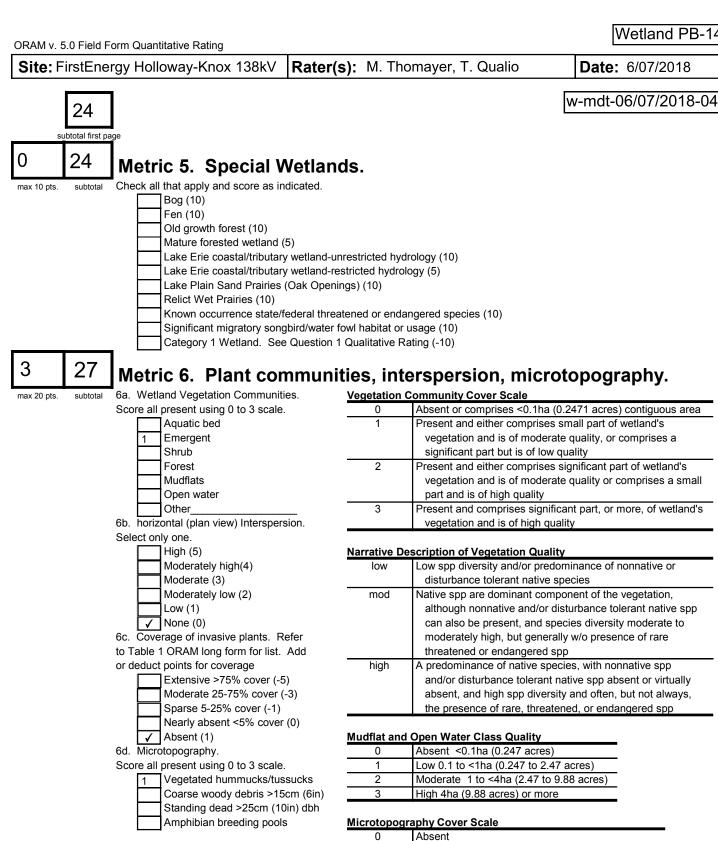
of marginal guality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts





-	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		

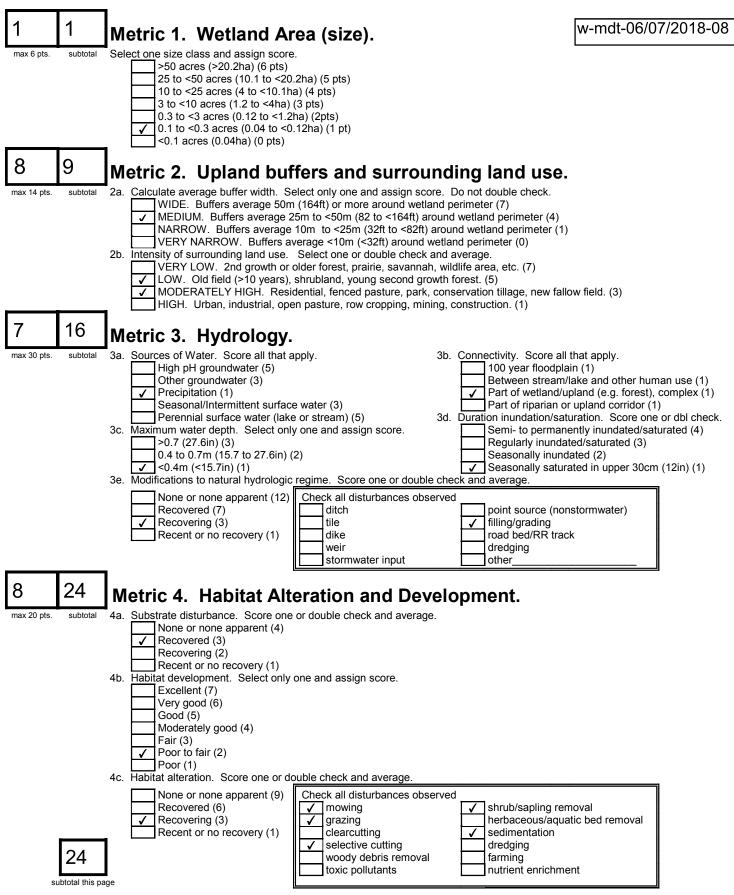
# GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Site: FirstEnergy Holloway-Knox 138kV

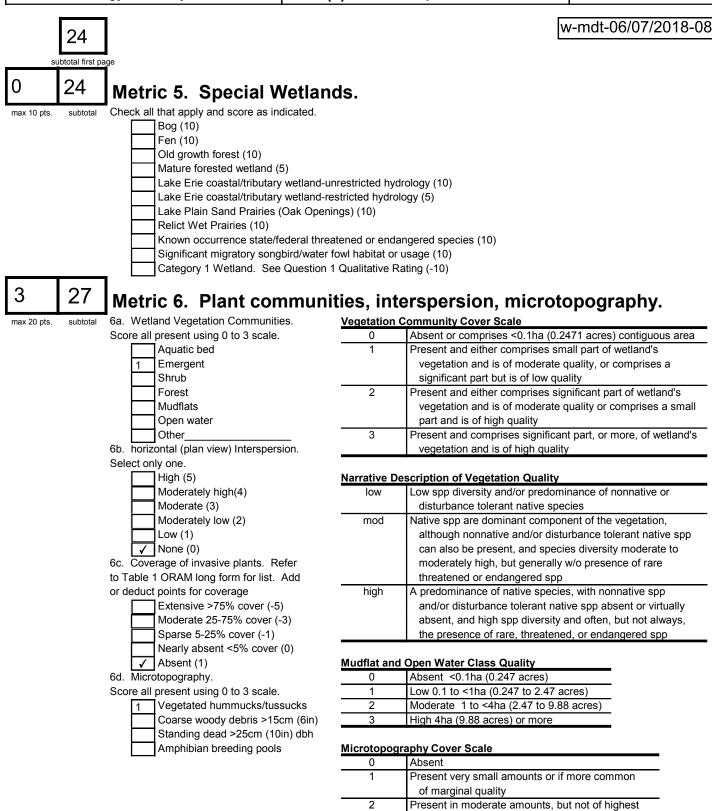
 Wetland PB-15

 Rater(s): M. Thomayer, T. Qualio
 Date: 6/07/2018





Date: 6/07/2018



27 GRAND TOTAL (max 100 pts)

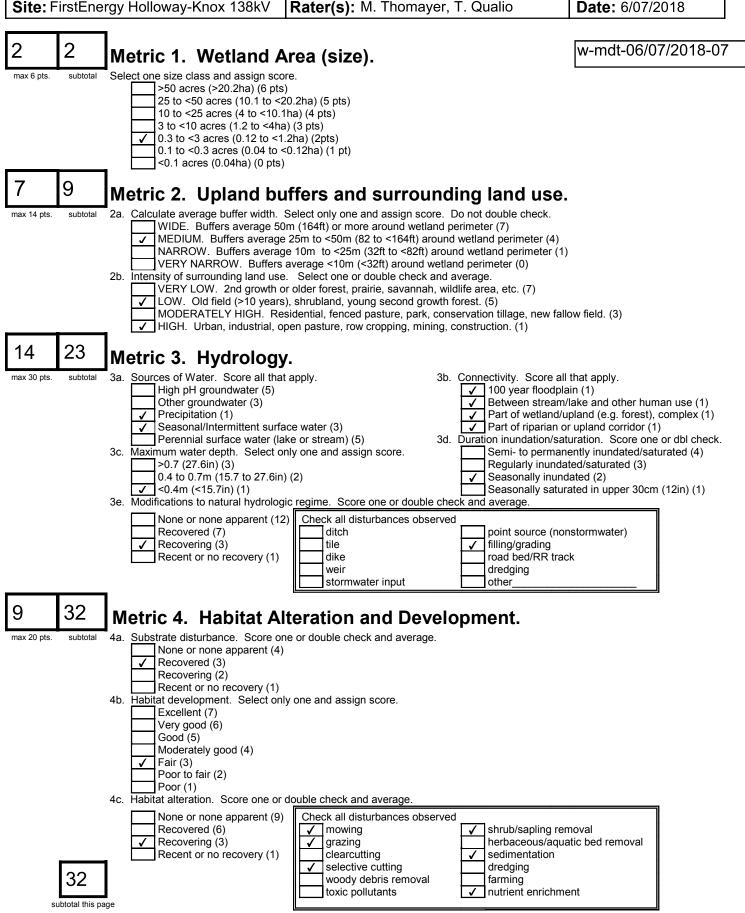
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

3

quality or in small amounts of highest quality

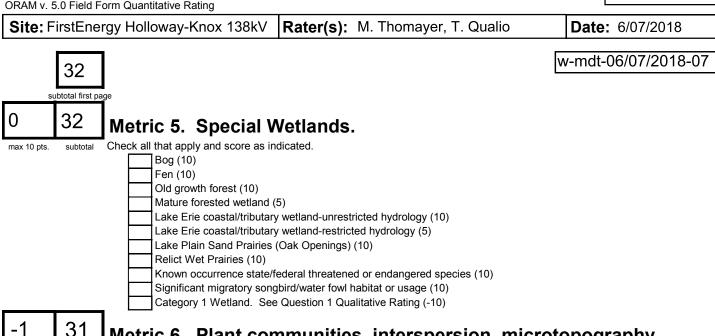
Present in moderate or greater amounts

Date: 6/07/2018



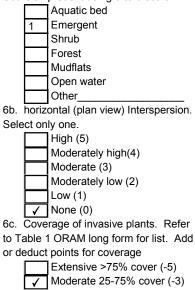
max 20 pts.

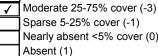
Wetland PB-16



## Metric 6. Plant communities, interspersion, microtopography.

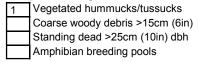
6a. Wetland Vegetation Communities. subtotal Score all present using 0 to 3 scale.





6d. Microtopography.

Score all present using 0 to 3 scale.



#### **Vegetation Community Cover Scale** Absent or comprises <0.1ha (0.2471 acres) contiguous area 0 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 vegetation and is of moderate quality or comprises a small part and is of high quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality

## Narrative Description of Vegetation Quality

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

## Mudflat and Open Water Class Quality

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

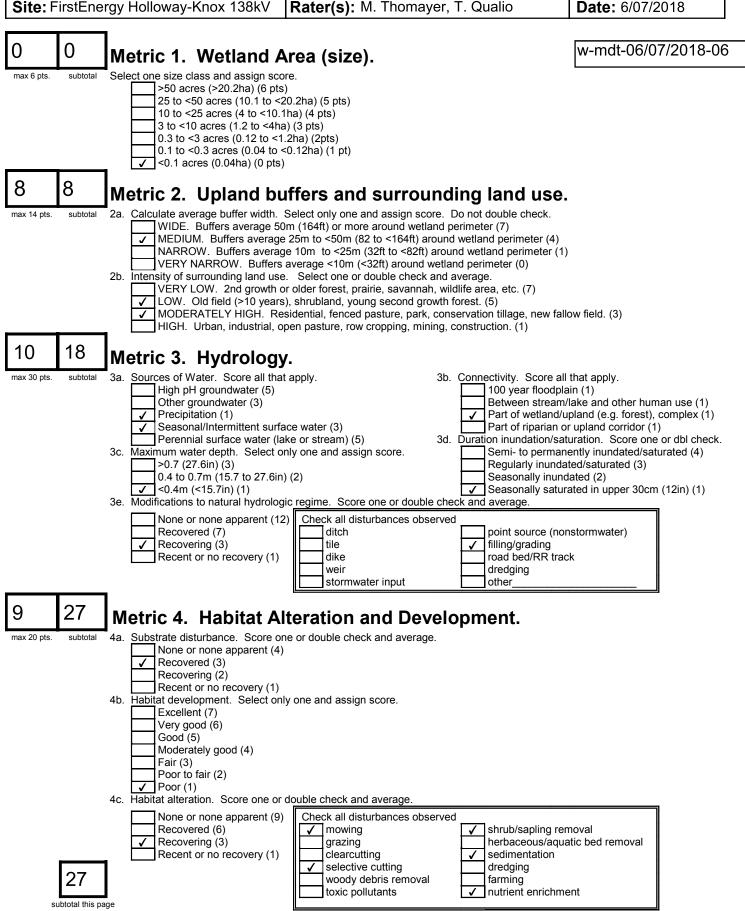
## **Microtopography Cover Scale**

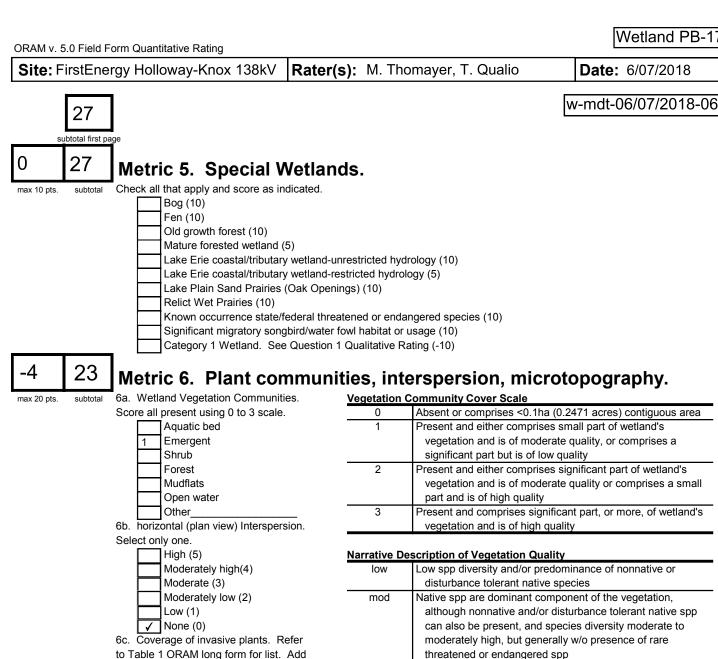
0	Absent			
1	Present very small amounts or if more common			
	of marginal quality			
2	Present in moderate amounts, but not of highest			
	quality or in small amounts of highest quality			
3	Present in moderate or greater amounts			
	and of highest quality			

#### 31 GRAND TOTAL (max 100 pts)

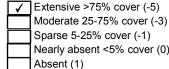
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/07/2018



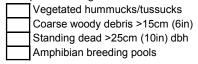


to Table 1 ORAM long form for list. Add or deduct points for coverage



6d. Microtopography.

Score all present using 0 to 3 scale.



the presence of rare, threatened, or endange				
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)			

A predominance of native species, with nonnative spp

and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always,

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

## **Microtopography Cover Scale**

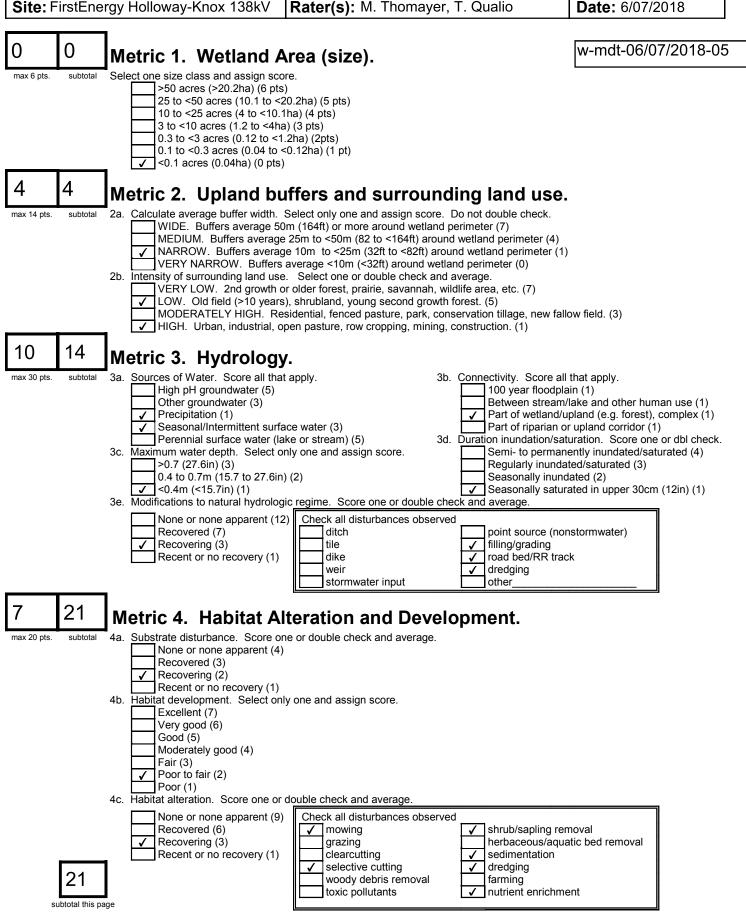
high

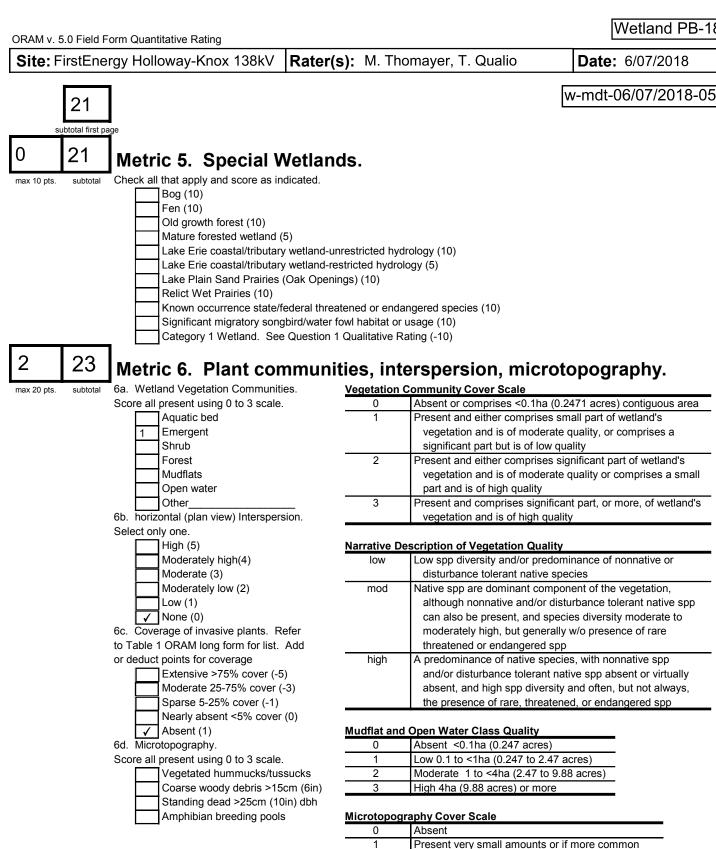
0	Absent			
1	Present very small amounts or if more common			
	of marginal quality			
2	Present in moderate amounts, but not of highest			
	quality or in small amounts of highest quality			
3 Present in moderate or greater amounts				
	and of highest quality			

23 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/07/2018





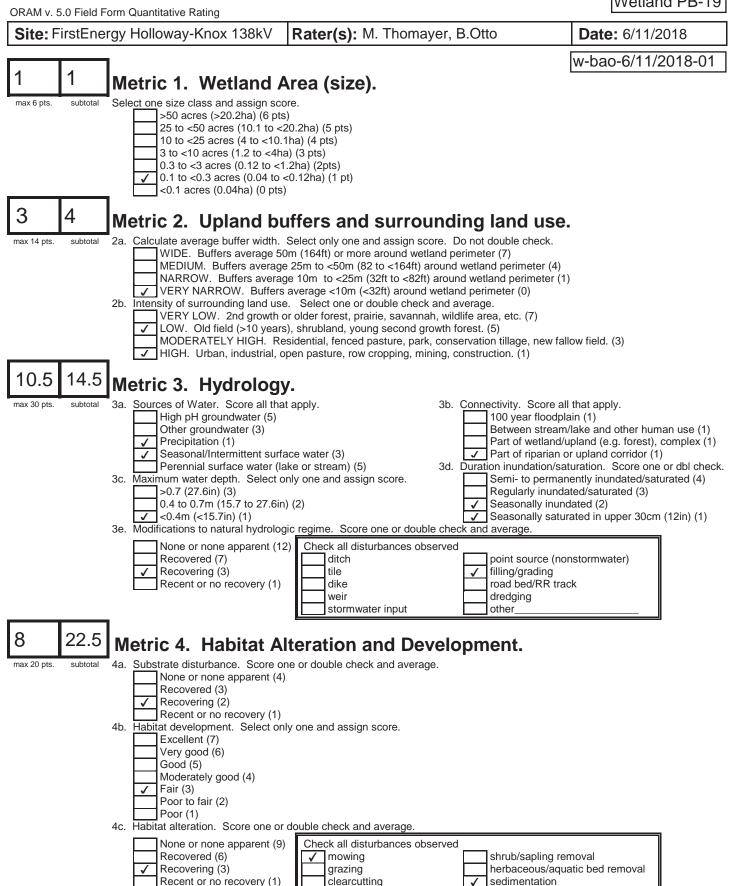
	or marginar quanty	
2	Present in moderate amounts, but not of highes	
	quality or in small amounts of highest quality	
3	Present in moderate or greater amounts	
	and of highest quality	

of marginal guality

of highest

23 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm



selective cutting

toxic pollutants

woody debris removal

1

dredging

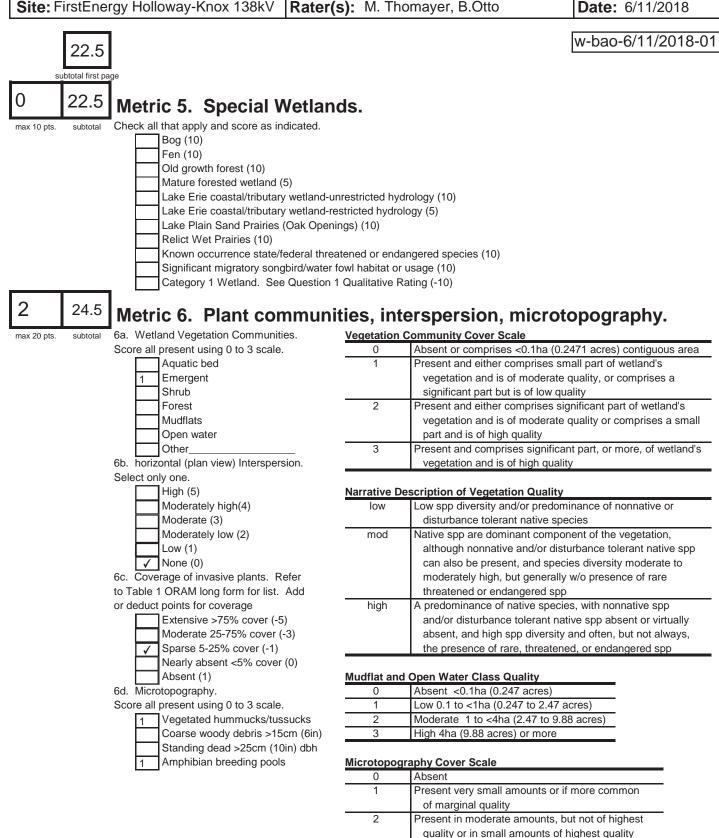
nutrient enrichment

farming



last revised 1 February 2001 jjm

Date: 6/11/2018

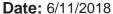


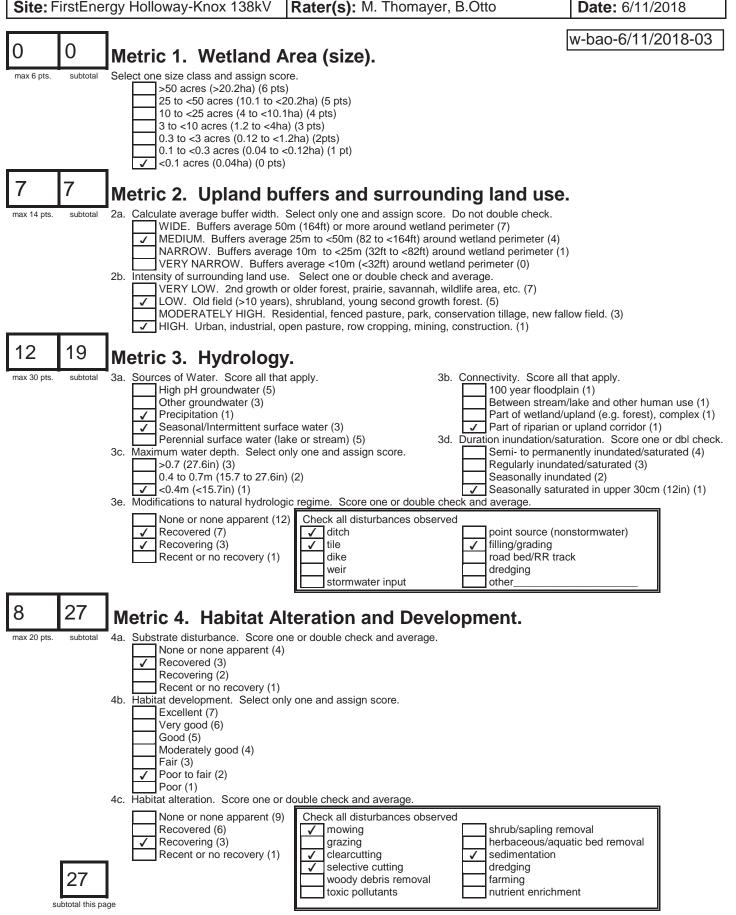
24.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

3

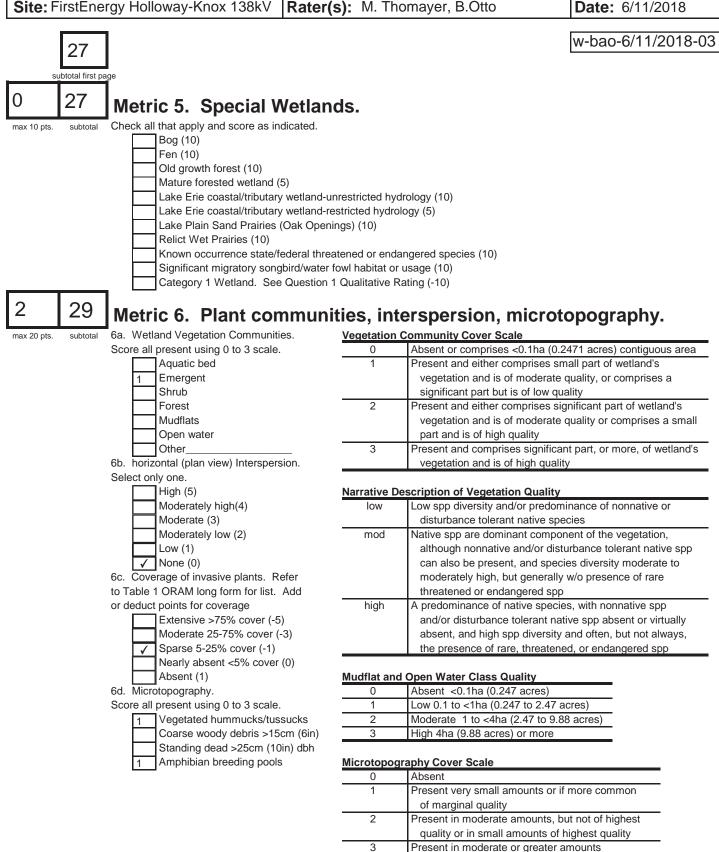
Present in moderate or greater amounts





last revised 1 February 2001 jjm

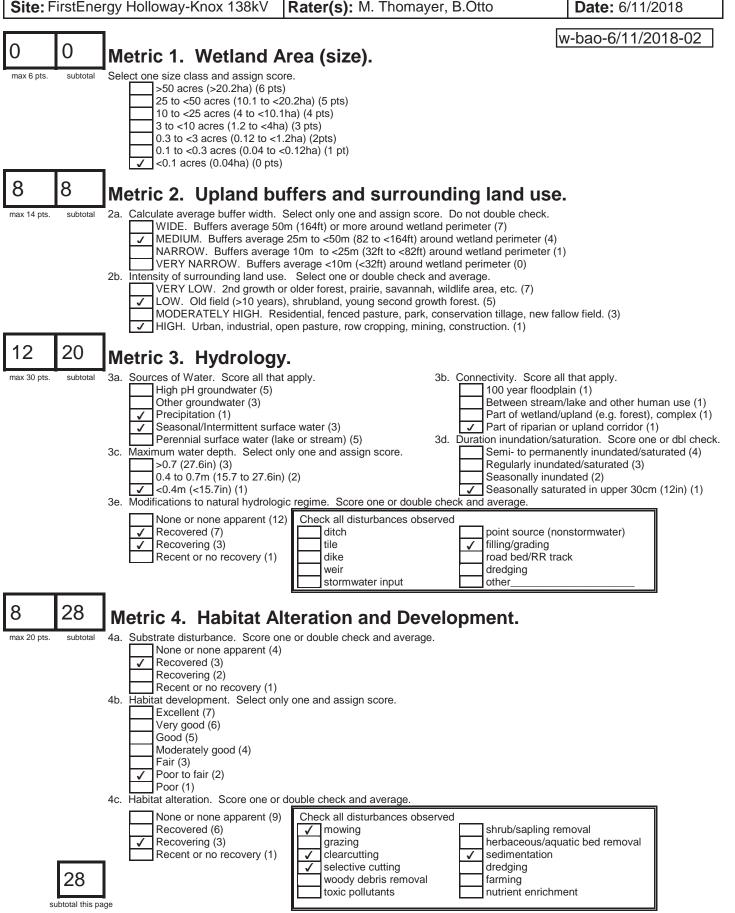
Date: 6/11/2018



29 GRAND TOTAL (max 100 pts)

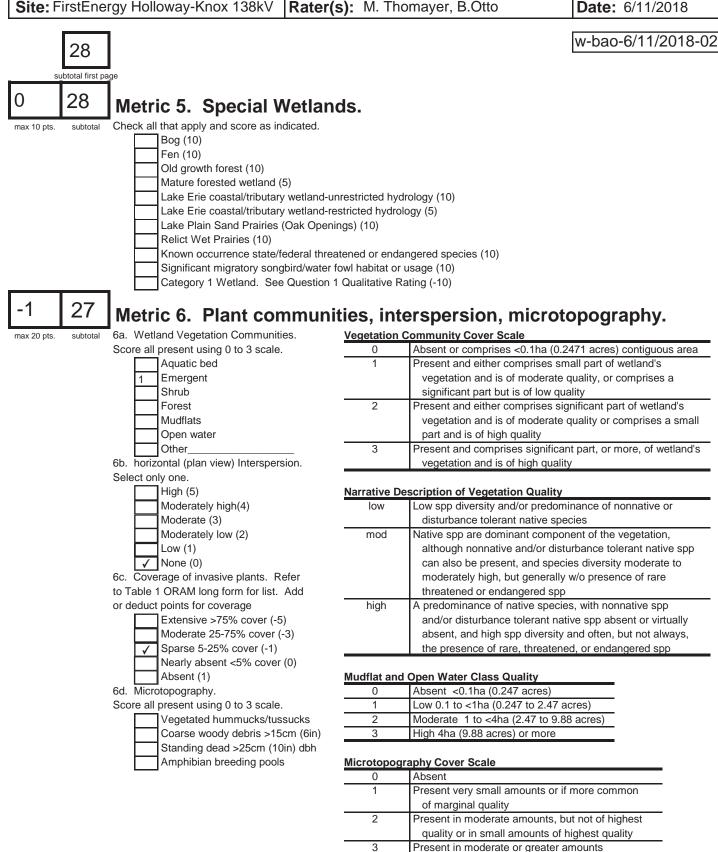
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 6/11/2018



last revised 1 February 2001 jjm

Date: 6/11/2018



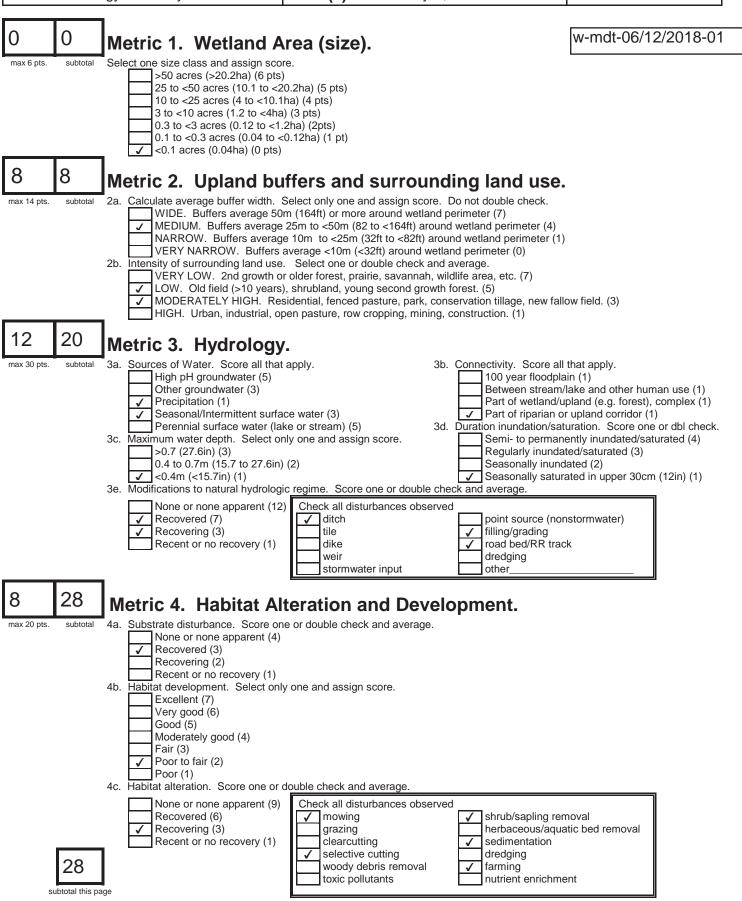
27 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Site: FirstEnergy Holloway-Knox 138kV

Wetland PB-22

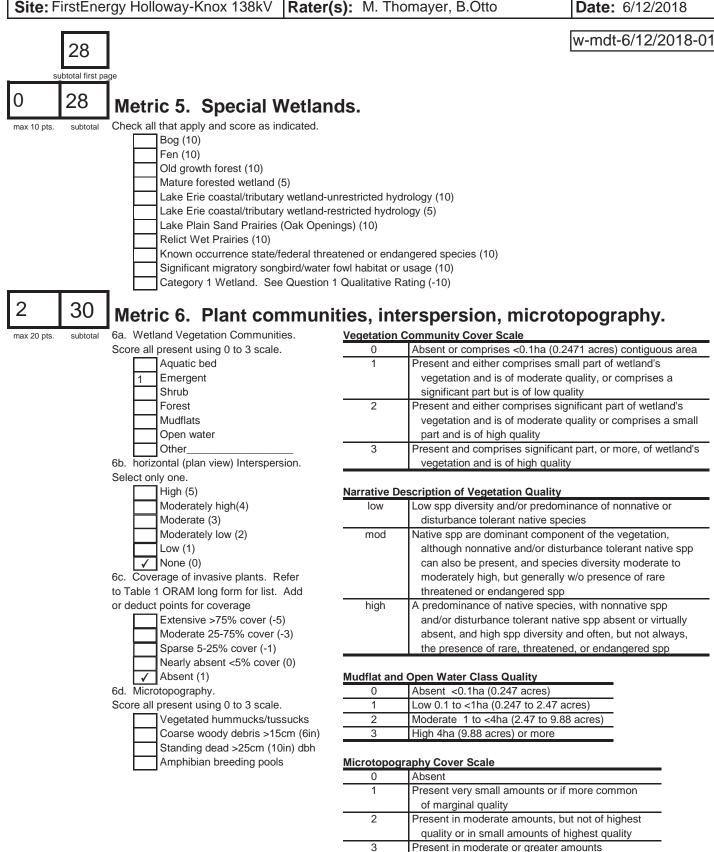
Date: 6/12/2018



Rater(s): M. Thomayer, B.Otto

last revised 1 February 2001 jjm

Date: 6/12/2018

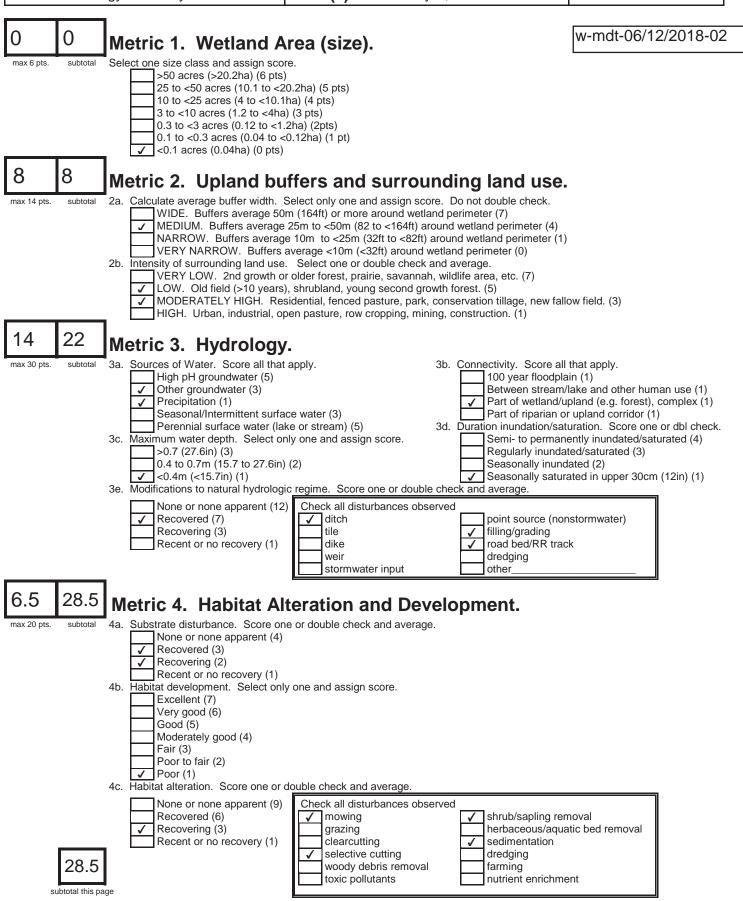


30 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Site: FirstEnergy Holloway-Knox 138kV

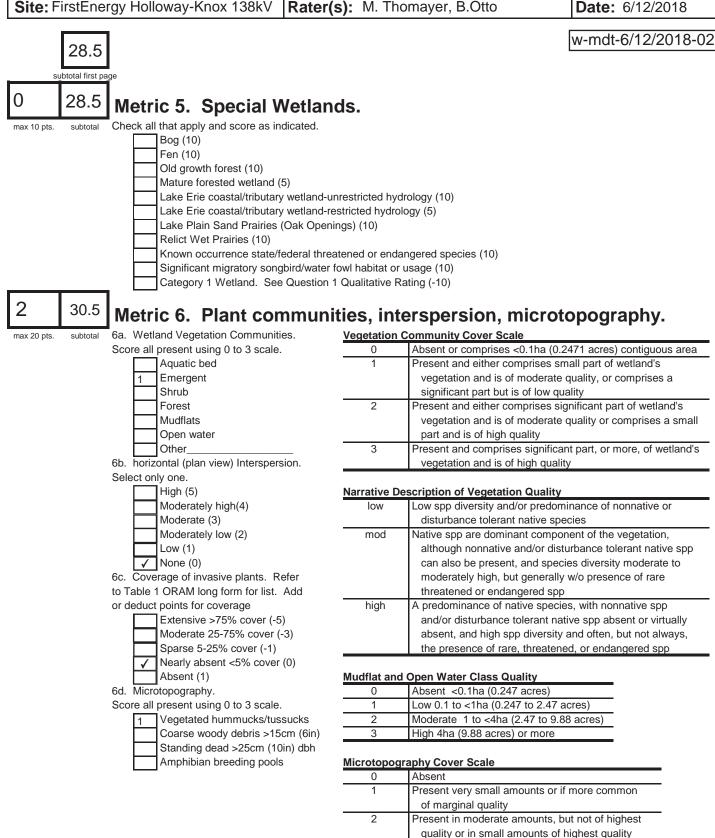
Date: 6/12/2018



Rater(s): M. Thomayer, B.Otto

last revised 1 February 2001 jjm

Date: 6/12/2018



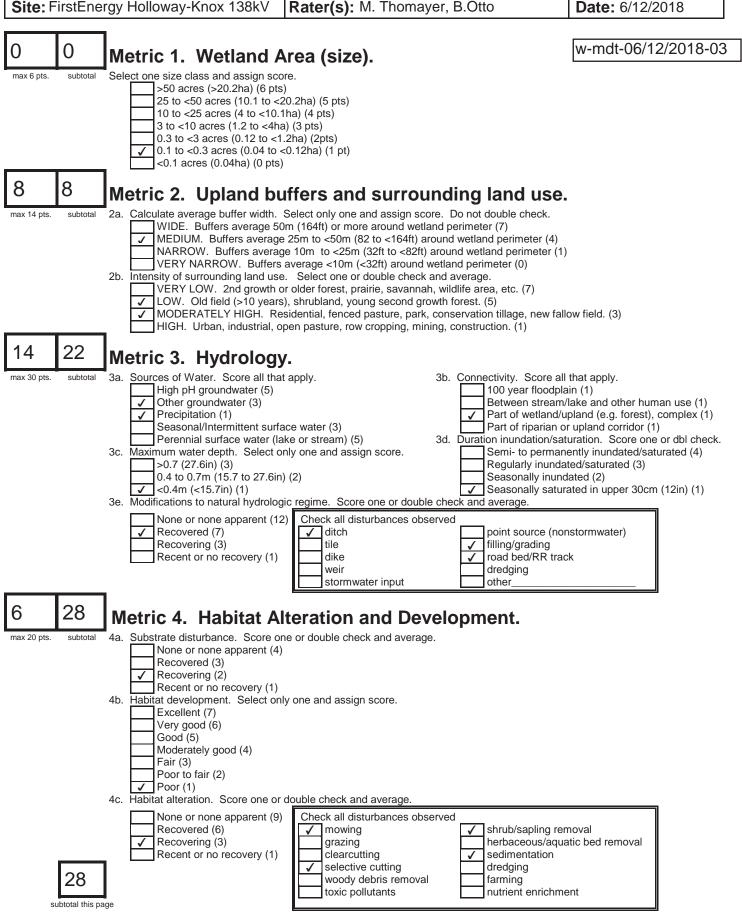
30.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

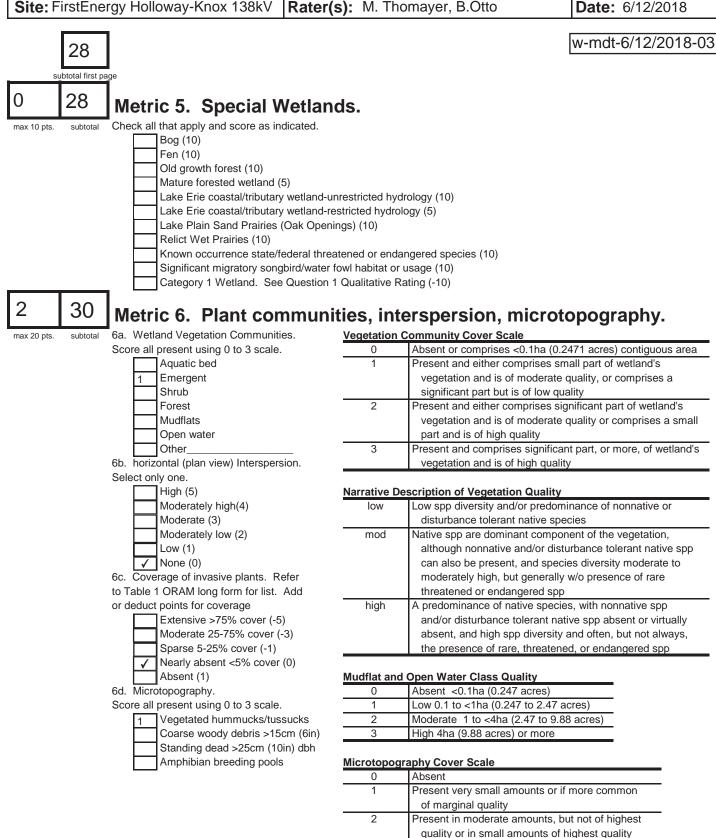
3

Present in moderate or greater amounts

Date: 6/12/2018



Date: 6/12/2018



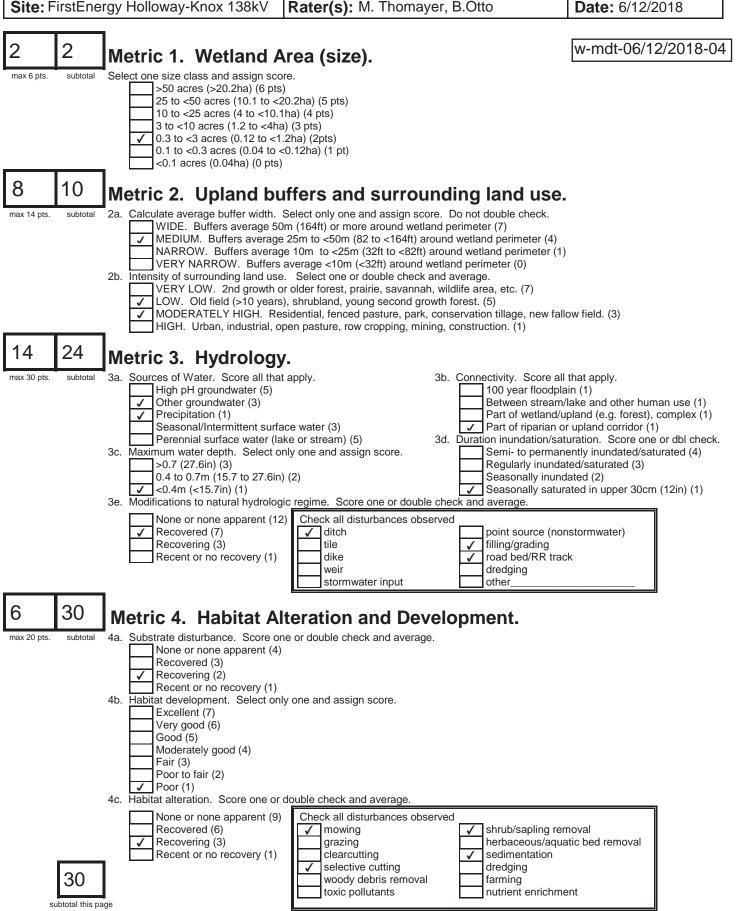
30 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

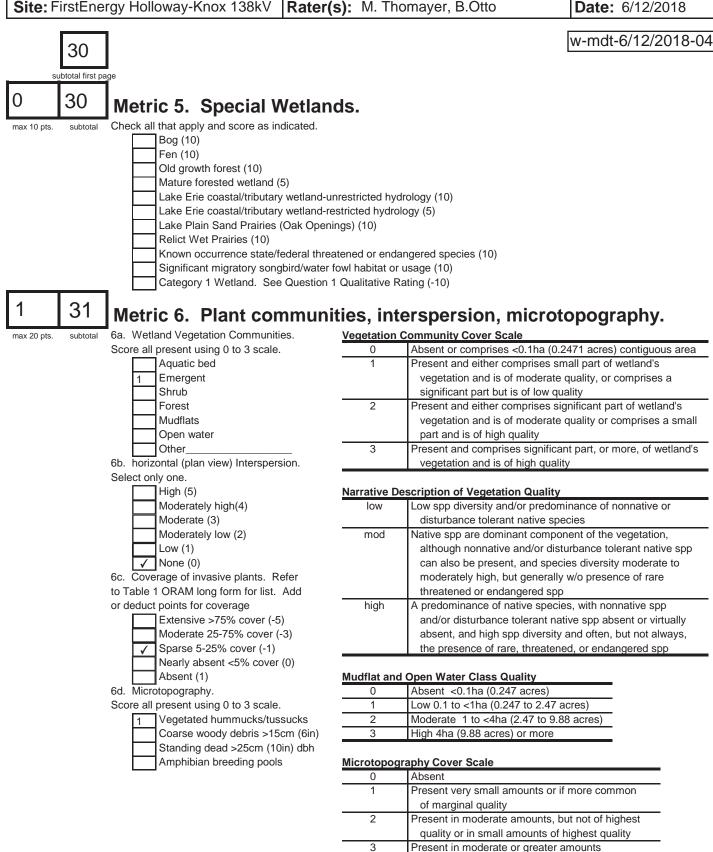
3

Present in moderate or greater amounts

Date: 6/12/2018



Date: 6/12/2018

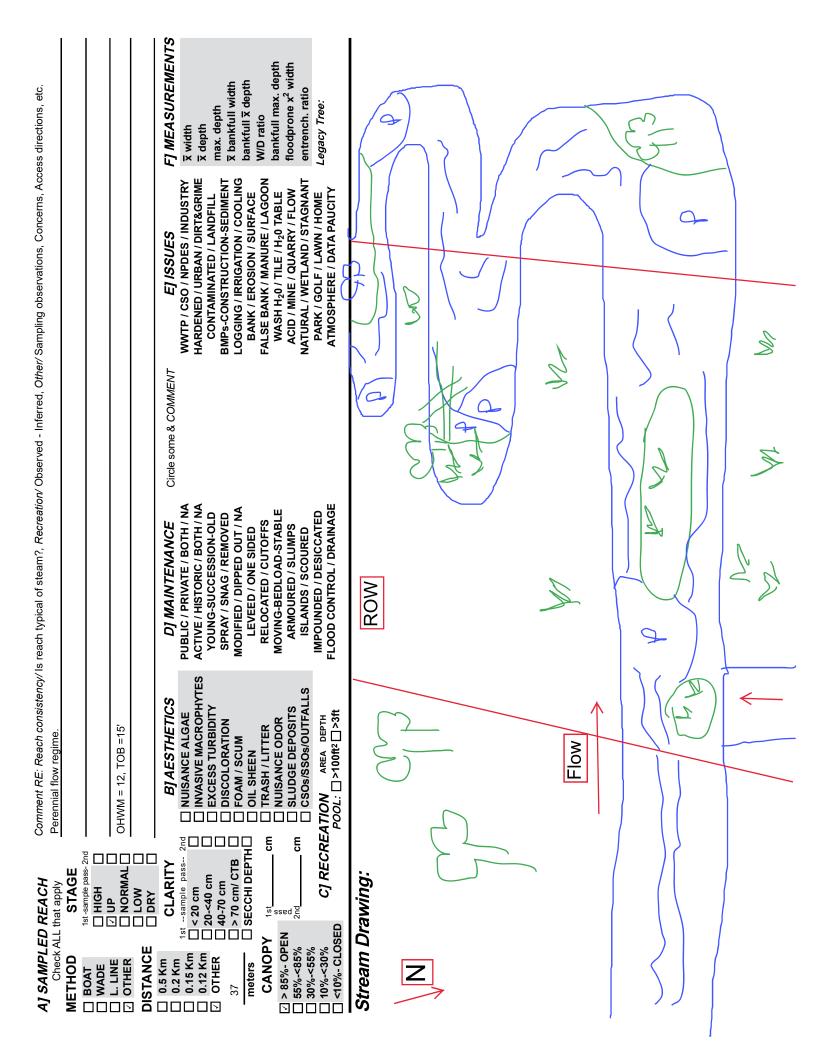


31 GRAND TOTAL (max 100 pts)

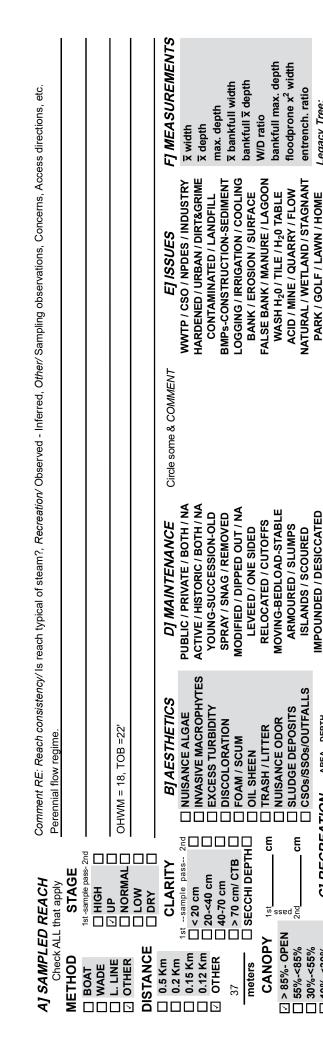
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Appendix C OEPA QHEI Datasheets

		St	ream PB-03 2-mdt-060618-03
<b>ChicEPA</b>		itat Evaluation Index sment Field Sheet	<b>QHEI Score:</b> 45
Stream & Location: Holloway-k	Knox 138kV Transmission Line	(Dining Fork)	<b>RM:Date:</b> 06   06   18
S-MDT-06062018-03		ers Full Name & Affiliation:	M. Thomayer, T.Qualio-CH2M HILL
<i>River Code:</i>	STORET #:	Lat./ Long.: 40 44736	/8_1 . 049597 Office verified location ☑
1] SUBSTRATE Check ONLY Two estimate % or po	<b>vo</b> substrate <i>TYPE BOXES</i> ; ote every type present	Check (	ONE (Or 2 & average)
BEST TYPES POOL RIF	OTLED TVDES		QUALITY
BLDR /SLABS [10]	□ □ HARDPAN [4] <u>23</u> □ □ DETRITUS [3]	5 10 ✓ LIMESTONE [1]	HEAVY [-2]
	刘 🗌 🗌 миск [2] 👘 🔤	WETLANDS [0]	
GRAVEL [7] <u>10</u> 40 GRAVEL [7] <u>20</u> 25		5 <u>10</u> <b>∀ HARDPAN [0]</b>	
	(Score natural subs	strates: ignore RIP/RAP [0]	Maximum
	☐ 4 or more [2] sludge from p ☑ 3 or less [0]	oint-sources) LACUSTURINE [0]	ACCEPTENTION CONTINUE [-2] CONTINUE [-2] CONTINUE [-2] Maximum 20 Maximum 20
Comments bricks lining stream bed		COAL FINES [-2]	
2] INSTREAM COVER Indicate	presence 0 to 3. 0-Absent. 1-V	/erv small amounts or if more commo	on of marginal <b>AMOUNT</b>
quality; 3-Highest quality in moderate	2-Moderate amounts, but not o	f highest quality or in small amounts	of highest
diameter log that is stable, well deve UNDERCUT BANKS [1]	loped rootwad in deep / fast wa	ter, or deep, well-defined, functional	pools.   EXTENSIVE >75% [11]
1 OVERHANGING VEGETATIO	N [1] ROOTWADS [1]	[2] OXBOWS, BACKWATE AQUATIC MACROPHY	TES [1] SPARSE 5-<25% [3]
1 SHALLOWS (IN SLOW WATE ROOTMATS [1]	ER) [1] BOULDERS [1]	1 LOGS OR WOODY DE	BRIS [1] 🔲 NEARLY ABSENT <5% [1]
Comments			Cover Maximum 10
			20
3] CHANNEL MORPHOLOGY			
SINUOSITY DEVELOPM		TION STABILITY	
MODERATE [3] GOOD [5]	RECOVERED [4]	MODERATE [2]	
□ LOW [2]	RECOVERING [3]	ECOVERY [1]	Channel
Comments			Maximum 11
4] BANK EROSION AND RIP		in each category for <b>EACH BANK</b> (C	Dr 2 per bank & average)
River right looking downstream			TY
		FOREST, SWAMP [3]	
	ARROW 5-10m [2]	SHRUB OR OLD FIELD [2] RESIDENTIAL, PARK, NEW FIELD	URBAN OR INDUSTRIAL [0]
	ERY NARROW < 5m [1]	FENCED PASTURE [1]	Indicate predominant land use(s)
Comments		OPEN PASTURE, ROWCROP [0]	past 100m riparian. <b>Riparian</b> Maximum 5
			10
5] POOL / GLIDE AND RIFFL MAXIMUM DEPTH	<i>E / RUN QUALITY</i> CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
	eck ONE (Or 2 & average)	Check ALL that apply	Primary Contact
		□ TORRENTIAL [-1]	Secondary Contact
🖸 0.4-<0.7m [2] 🛛 🗌 POOL	WIDTH < RIFFLE WIDTH [0]	🗆 FAST [1] 👘 🗆 INTERMIT	
☐ 0.2-<0.4m [1] ☐ < 0.2m [0]		MODERATE [1] DEDDIES [1 Indicate for reach - pools and ri	
Comments			Maximum 12
Indicate for functional rit	ffles: Best areas must b	e large enough to support	
of riffle-obligate species	Check ON	E (Or 2 & average).	<u> NO RIFFLE [metric=0]</u>
	UN DEPTH RIFFL		FLE / RUN EMBEDDEDNESS
BEST AREAS 5-10cm [1]	KIMUM < 50cm [1] 🔲 MOD. S	TABLE (e.g., Large Gravel) [1]	
BEST AREAS < 5cm [metric=0]		BLE (e.g., Fine Gravel, Sand) [0]	MODERATE [0] Riffle / C EXTENSIVE [-1] Maximum
Comments			
· · · · · · · · · · · · · · · · · · ·	VERY LOW - LOW [2-4]	%POOL:(30)	%GLIDE: 20 Gradient
	MODERATE [6-10] HIGH - VERY HIGH [10-6]	$\succ$	
( 4.92 mi <sup>2</sup> )			



		St	ream PB-12 s-mdt-060718-04	4
<b>ChicEPA</b>	Qualitative Habita and Use Assessr	t Evaluation Index ment Field Sheet	QHEI Score: 48	
Stream & Location: Holloway-Kno	x 138kV Transmission Line (Iris	h Creek)	RM:Date:06   07   1	8
S-MDT-06072018-04		Full Name & Affiliation:	M. Thomayer, T.Qualio-CH2M HILL	_
River Code:	_STORET #:	Lat./ Long.: 40 401744	<b>/8</b> _1_051716 Office veril locat	fied tion ☑
1] SUBSTRATE Check ONLY Two sestimate % or note	substrate <i>TYPE BOXES</i> ; every type present	Check C	NE (Or 2 & average)	
BEST TYPES POOL RIFFL			QUALITY	
BLDR /SLABS [10]     BOULDER [9]	_ □ □ HARDPAN [4] <u>15</u> _ □ □ DETRITUS [3]	_ <u>5</u>	HEAVY [-2]	ostrate
COBBLE [8] 20	🗌 🗌 МИСК [2]	WETLANDS [0]		
□ GRAVEL [7] <u>10</u> <u>40</u> □ J SAND [6] <u>20</u> <u>20</u>	_	<u>15</u> <b>☐ HARDPAN [0] ☐ SANDSTONE [0]</b>	<u>ل FREE [1]</u> ک DE MEXTENSIVE [-2]	5
	(Score natural substrate	es; ignore RIP/RAP [0] sources) LACUSTURINE [0]	MODEONE DE EXTEÑSIVE [-2] MODERATE [-1] Max NORMAL [0] NONE [1]	ximum
NUMBER OF BEST TYPES:	a or less [0]	SHALE [-1]		20
<i>Comments</i> bricks lining stream bed		COAL FINES [-2]		
21 INSTREAM COVER Indicate pr	esence 0 to 3: 0-Absent; 1-Very	small amounts or if more commo	n of marginal AMOUNT	_
quality; 3-Highest quality in moderate of a second seco	Moderate amounts, but not of hig r greater amounts (e.g., very larc	phest quality or in small amounts ge boulders in deep or fast water,	of highest large Check ONE (Or 2 & average	?)
diaméter log that is stable, well develop <u>1</u> UNDERCUT BANKS [1]		or deep, well-defined, functional OXBOWS, BACKWATE		
1 OVERHANGING VEGETATION	[1] <u>1</u> ROOTWADS [1]	AQUATIC MACROPHY	TES [1]	-
SHALLOWS (IN SLOW WATER) ROOTMATS [1]	[1] BOULDERS [1]	1 LOGS OR WOODY DEE		1
Comments			Cover Maximum 20	1
3] CHANNEL MORPHOLOGY				_
SINUOSITY DEVELOPMEI		N STABILITY		
MODERATE [3] GOOD [5]	RECOVERED [4]	MODERATE [2]		
□ LOW [2]	RECOVERING [3]	□ LOW [1]	Channel	
Comments			Maximum 20	2
4] BANK EROSION AND RIPA River right looking downstream				
	PARIAN WIDTH E > 50m [4] □ □ □ FC	FLOOD PLAIN QUALI DREST, SWAMP [3]		11
	DERATE 10-50m [3] 🛛 🛛 🖓 SH	IRUB OR OLD FIELD [2]	U URBAN OR INDUSTRIAL [0]	
□         MODERATE [2]         □         NAF           ☑         ☑         HEAVY / SEVERE [1]         ☑         ☑	ROW 5-10m [2]	ESIDENTIAL, PARK, NEW FIELD ENCED PASTURE [1]	[1] I MINING / CONSTRUCTION [0 Indicate predominant land use(s)	0]
	IE [0]	PEN PASTURE, ROWCROP [0]	past 100m riparian. Riparian	
Comments			Maximum 10	
5] POOL / GLIDE AND RIFFLE	/ RUN QUALITY			
		CURRENT VELOCITY	Recreation Potential	
	CONE (Or 2 & average) IDTH > RIFFLE WIDTH [2]	Check ALL that apply	Primary Contact Secondary Contact	5
	IDTH = RIFFLE WIDTH [1] U IDTH < RIFFLE WIDTH [0] F	/ERY FAST [1]	IAL [-1] (circle one and comment on back)	
0.2-<0.4m [1]		NODERATE [1] 🛛 EDDIES [1]	Pool /	
□ < 0.2m [0] Comments		Indicate for reach - pools and rif	fles. Current Maximum	· ]
			12 🔪	
Indicate for functional riffle of riffle-obligate species:		arge enough to support a Dr 2 & average).	a population	ic=0]
RIFFLE DEPTH RUI	N DEPTH RIFFLE	RUN SUBSTRATE RIFF	LE / RUN EMBEDDEDNESS	
☑ BEST AREAS > 10cm [2]       □ MAXIM         □ BEST AREAS 5-10cm [1]       ☑ MAXIM	/IUM > 50cm [2]	g., Cobble, Boulder) [2] LE (e.g., Large Gravel) [1]	□ NONE [2] □ LOW [1]	
BEST AREAS < 5cm [metric=0]		(e.g., Fine Gravel, Sand) [0]	MODERATE IN Riffle /	
<i>Comments</i>				Ĺ
6] <i>GRADIENT</i> ( 25 ft/mi)	VERY LOW - LOW [2-4]	%POOL: 30		
DRAINAGE AREA 🕺 🗹	MODERATE [6-10]			6
( 16.2 mi²)	HIGH - VERY HIGH [10-6]	%RUN: (20)	%RIFFLE: 30 Maximum 10	



## Stream Drawing:

<10%- CLOSED</p>

□ 10%-<30%

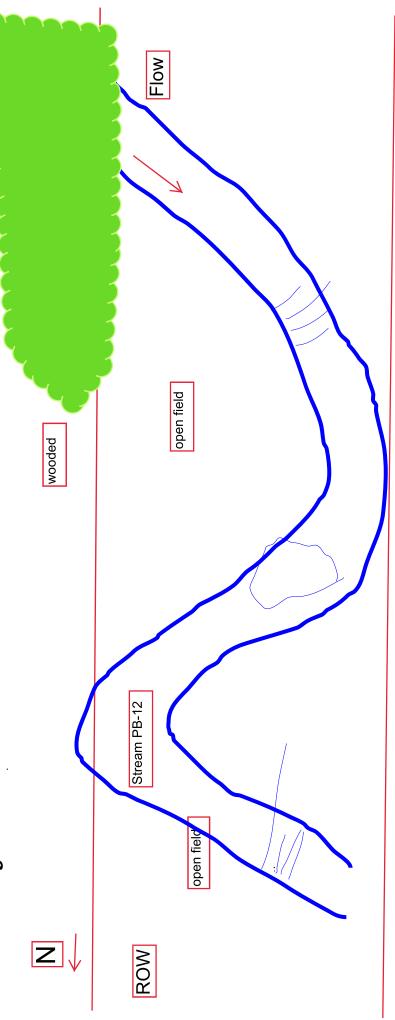
Legacy Tree:

ATMOSPHERE / DATA PAUCITY

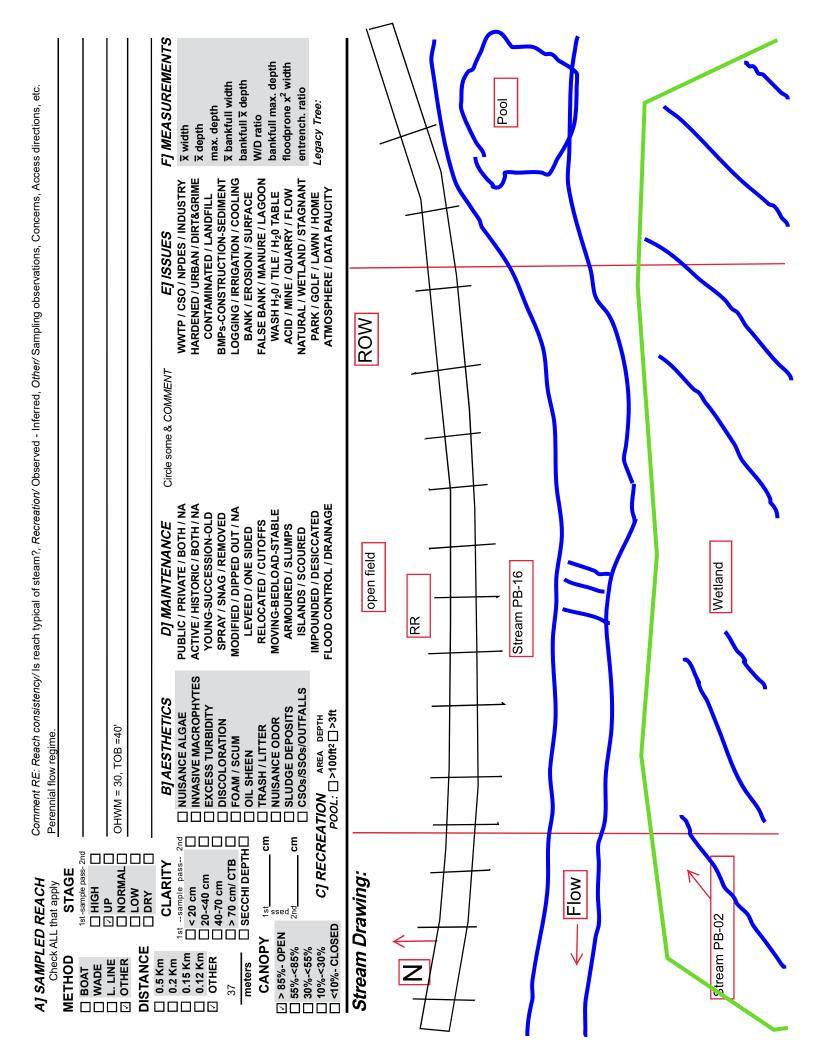
FLOOD CONTROL / DRAINAGE

POOL: 0>100ft2 >3ft AREA DEPTH

**CJ RECREATION** 



OWNERNA       Qualitative Habitat Evaluation Index       QHEI Score:       [4]         Strem & Location:       Indexeq.Knox 138kV Transmission Line (Conduto Creek)       RM:
Scorers Full Name & Affiliation: M. Thomayer, T. Qualic-CH2M HILL         River Code:
River Code:
1) SUBSTRATE Check ONLY Two substrate TVPE BOXES: estimate & or note every type present BEST TYPES POOL RIFFLE       Check ONE (Or 2 & average)         0       DEDR (SLABS [10]       0       OTHER TYPES POOL RIFFLE       ORIGIN         0       DEDR (SLABS [10]       0       0       BAND (SLABS [10]       0         0       COBBLE [8]       5       0       MUCK [2]       5       0       WertLANDS [1]       0       Substrat         0       COBBLE [8]       5       0       MUCK [2]       5       0       WertLANDS [1]       0       NORMAL [0]       F#TENSWE [2]       Substrat         0       GRAVEL [7]       40       0       SILT [2]       5       0       MUCK [2]       Substrat         NUMBER OF BEST TYPES:       14 or more [2] sludge from point-sources)       SANDSTONE [0]       SANDSTONE [0]       SANDRAL [0]       MODERATE [-1]       0       MODERATE [-1]       0       MODERATE [-1]       0       MODERATE [-1]       0       0       0       0       0       0
BEST TYPES       OTHER TYPES       ODURIFILE       OTHER TYPES       OUALITY         BUDR SLABS [10]       OTHER TYPES       ODURIFILE       ILMESTONE [11]       ILMESTONE [11]       HEAVY [2]         BOULDER [9]       ODERATE [12]       DETRIVES       OUALITY       HEAVY [2]       Substrate         Image: Cord Budget and State
BEST TYPES       POOL RIFFLE       ORIGIN       GUALITY         BUDR /SLAPES       OF HER TYPES       OF HARDPAN [4]       15       5       HARDPAN [2]       SLIT       HEAVY [-2]       MODERATE [-1]       NORMAL [0]       Substrat         BUDR /SLAPES       0       SILT [2]       42       20       HARDPAN [0]       SILT       HEAVY [-2]       MODERATE [-1]       NORMAL [0]       Substrat         BOBLOR /SLAPES       30       OR ATTFICAL [0]       SAND 5TOR [0]       SAND 5TOR [0]       SAND 5TOR [0]       SUBSTRAT
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality in moderate or greater amounts, but not of highest quality or in small amounts of highest quality or is small amounts of highest quality orestress (1)
Comments       Cover Maximum 20       11         3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)       SINUOSITY       DEVELOPMENT       CHANNELIZATION       STABILITY         HIGH [4]       EXCELLENT [7]       NONE [6]       HIGH [3]       MODERATE [2]         LOW [2]       FAIR [3]       RECOVERED [4]       MODERATE [2]         NONE [1]       POOR [1]       RECOVERING [3]       LOW [1]       Channel Maximum 20         12       All BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)       Maximum 20       12         River right looking downstream       RIPARIAN WIDTH       FLOOD PLAIN QUALITY       Conservation tillage [1]         MODERATE [2]       MODERATE 10-50m [3]       SHRUB OR OLD FIELD [2]       URBAN OR INDUSTRIAL [0]         MODERATE [2]       MODERATE 10-50m [3]       SHRUB OR OLD FIELD [2]       URBAN OR INDUSTRIAL [0]         MODERATE [2]       NARROW 5-10m [2]       SHRUB OR OLD FIELD [2]       URBAN OR INDUSTRIAL [0]         HEAVY / SEVERE [1]       NARROW 5-10m [2]       GOPEN PASTURE, ROWCROP [0]       Indicate predominant land use(s) past 100m riparian. Maximum 10         2       OPEN PASTURE, ROWCROP [0]       STABULITY       Indicate predominant land use(s) past 100m riparian. Maximum 10       10         5] POOL / GLIDE AND RIFFLE / RUN QUALITY
SINUOSITY       DEVELOPMENT       CHANNELIZATION       STABILITY         HIGH [4]       EXCELLENT [7]       NONE [6]       HIGH [3]         MODERATE [3]       GOOD [5]       RECOVERED [4]       MODERATE [2]         LOW [2]       FAIR [3]       RECOVERING [3]       Low [1]       Channel Maximum 20         NONE [1]       POOR [1]       RECOVERING [3]       Low [1]       Low [1]       12         4]       BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)       River right looking downstream       RIPARIAN WIDTH       FLOOD PLAIN QUALITY       Reconservation Tillage [1]         NONE / LITTLE [3]       MODERATE 10-50m [3]       SHRUB OR OLD FIELD [2]       URBAN OR INDUSTRIAL [0]       URBAN OR INDUSTRIAL [0]         MODERATE [2]       NARROW 5-10m [2]       SHRUB OR OLD FIELD [2]       URBAN OR INDUSTRIAL [0]       Indicate predominant land use(s) past 100m riparian.       Riparian Maximum 10       10         2       HEAVY / SEVERE [1]       VERY NARROW < 5m [1]
River right looking downstream       RIPARIAN WIDTH         EROSION       WIDE > 50m [4]         NONE / LITTLE [3]       MODERATE 10-50m [3]         MODERATE [2]       NARROW 5-10m [2]         NARROW 5-10m [2]       RESIDENTIAL, PARK, NEW FIELD [1]         HEAVY / SEVERE [1]       VERY NARROW < 5m [1]
Check ONE (ONLY!)       Check ONE (Or 2 & average)       Check ALL that apply         > 1m [6]       POOL WIDTH > RIFFLE WIDTH [2]       TORRENTIAL [-1]       SLOW [1]         0.7-<1m [4]
Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:       Check ONE (Or 2 & average).       INO RIFFLE [metric=0]         RIFFLE DEPTH       RUN DEPTH       RIFFLE / RUN SUBSTRATE       RIFFLE / RUN EMBEDDEDNESS         Ø BEST AREAS > 10cm [2]       MAXIMUM > 50cm [2]       STABLE (e.g., Cobble, Boulder) [2]       NONE [2]         BEST AREAS 5-10cm [1]       MAXIMUM < 50cm [1]
$\begin{array}{c c c c c c c c c c c c c c c c c c c $



Appendix D OEPA HHEI Datasheets

Stream PB-01	
ChieEPA Primary Headwater Habitat Evaluation Form 28	
HHEI Score (sum of metrics 1, 2, 3) :	_
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-05242018-03	]
SITE NUMBER PB-01 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	4
LENGTH OF STREAM REACH (ft)       62       LAT.       40.45073       LONG.       -81.04962       RIVER CODE       RIVER MILE         DATE       05/24/18       SCORER       TMQ, JF       COMMENTS       ephemeral flow regime	4
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       stream through ROW	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	El ric
BLDR SLABS [16 pts] 0% 2 SILT [3 pt] 90% Poin	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%	
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	40 \
GRAVEL (2-64 mm) [9 pts]       5%       Image: MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	
Total of Percentages of <b>Food</b> (A) Substrate Percentage (B)	
Bidr Slabs, Boulder, Cobble, Bedrock	1
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth	onth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max =	-
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓	
> 10 - 22.5 cm [25 pts]	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankf > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width	
= 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts] $ = 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts] $ $ = 3.0  m (<=3' 3") [5  pts] $ $ = 3.0  m (<=3' 3") [5  pts]$	
	7
COMMENTS tob: 2 ohwm: 0.5 AVERAGE BANKFULL WIDTH Feet : 2.00 5	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY *** NOTE: River Left (L) and Right (R) as looking downstream *** RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old	
Field      Image: Antice and the second of t	
None Fenced Pasture Mining or Construction	
COMMENTS ROW	
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)	
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	<u>d):</u>
QHEI PERFORMED? - Yes 🗸 No QHEI Score (If Yes,	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Dining Fork	Distance from Evaluated Stream 0.29 miles
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERS	SHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name: Scio NRCS Soil M	lap Page: NRCS Soil Map Stream Order
County: Carroll Township / City: Pe	srry
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 05/22/18	Quantity: 1.18
hotograph Information: _3 photos	
ilevated Turbidity? (Y/N): N Canopy (% open): 95%	
Vere samples collected for water chemistry? (Y/N): (Note lab sample no. or	r id. and attach results) Lab Number:
ield Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U	J.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N) If not, please explain	):
dditional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from th Voucher? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinverte Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREA	
T-Line ROV Edge	W. M. M.
T-Line C	Cer terline T-Line ROW Edge
PHWH Form Page - 2	
October 24, 2002 Revision	Save as pdf Reset Form

<form><form></form></form>	Stream P	B-02
HEI Score (sum of metrics 1, 2, 3):         SITE NAMELOCATION         SITE NAMELOCATION         FISTE NAMELOCATION         SITE NAMELOCATION <td>ChieFPA Primary Headwater Habitat Evaluation Form</td> <td>50</td>	ChieFPA Primary Headwater Habitat Evaluation Form	50
STE NUMBER       RIVER BASIN 05040001       DRAINAGE AREA (m/)       0.95         LENOTH OF STREAM REACH (m)       424       LAT. (40.4742       LONG. #1.04774       RIVER CODE       RIVER MILE         DATE       GOORDATE       SCORER       MDT, TMQ       COMMENTS       RIVER MILE       RIVER MILE         NOTE: Complete All tens On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions       STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERING       RECOVERING       RECOVERING       RECOVERING       Streams" for Instructions         STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECOVERING       RECOVERING       Streams" for Instructions         STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECOVERING       Recovering       Streams" for Instructions         SUBSTRATE (Selfing in)       GOG	HHEI Score (sum of metrics 1, 2, 3) :	00
LENGTH OF STREAM REACH (t)       424       LAT. 40.44742       LONG. B10.0474       RIVER CODE       RIVER MUE         DATE       GORGEN       SCORER       MDT, TMQ       COMMENTS       percential flow regime         NOTE: Complete All terms On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions       STREAM CHANNEL       Incomplete All terms On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for No RECOVERY         NODE/CATIONS:       appears some repeat tem percenteres with       RECOVERING       RECOVERING       RECOVERING       RECOVERING       RECOVERING       RECOVERING       Recover a No RECOVERING         SUBSTRATE (Estimate percent of every type of substrate present. Check OW.Y bog predominant discharts Present Substrate present (Check OW.Y bog predominant discharts Present Substrate TYPEs       Substrate       Substrate TYPE Substrate TYPEs       Substrate Substrate TYPEs		018-04
DATE       06/06/18       SCORER       MDT, TMQ       COMMENTS       perennial flow regime         NOTE:       Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions         STEAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       goodes activity good substrate present. Chock O/M.Y two predominant substrate TYPE boxes       Max of 32, Add total number of significant substrate present. Chock O/M.Y two predominant substrate TYPE boxes       Present the mater present of wave type of substrate present. Chock O/M.Y two predominant substrate TYPE boxes       Max of 32, Add total number of significant substrate types found Max of 8). Find metric score is sum of boxes A 8.       Multice (Lop 16)         YPE       BLOR SLASS (16 pts)       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%		).95
<form></form>		
STREAM CHANNEL       ONC / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT ON DRECOVERING         SUBSTRATE (Estimate precent of every type of substrate present. Check OWL Yong predominant substrate types found Max (8). Final metric score is sum of boxes A 8.       Image: Check OWL Yong predominant substrate types found Max (8). Final metric score is sum of boxes A 8.         Image: Check OWL Yong Check OWL Yong Predominant substrate types found Max (8). Final metric score is sum of boxes A 8.       Image: Check OWL Yong Predominant substrate types found Max (8). Final metric score is sum of boxes A 8.         Image: Check OWL Yong Check OWL Yong Predominant substrate types found Max (8). Final metric score is sum of boxes A 8.       Image: Check OWL Yong Predominant Substrate types found Max (8). Final metric score is sum of boxes A 8.         Image: Check OWL Yong Depth (Measure the maximum pool depth within the 61 meter (200 H) evaluation reach at the time of evaluation. Avoid plunge pools torn road culvers or storm weter pres:       Other X Yong Check OWL Yone box):       Image: X Yong Check OWL		
MODIFICATIONS:       beparse some impact them prior powerfulse wet:         1.       SUESTRATE (Estimate percent of every type of substrate present. Check. ONLY type predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types floand. (Max of 8). Final metric score is sum of boxes A & B.         YPE       BLDR SLABS (16 ps] BLDR SLABS (16 ps] BCDRCOK (16 pt] BCDR SLABS (16 ps] BCDRCOK (16 pt] BCDRCOK (16 pt] BC	•	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxs A & B.       Final metric score is sum of boxs A & B.		OVERY
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.       Final metric score is sum of boxes A & B.	1 SUBSTRATE (Estimate percent of every type of substrate present. Check ON/ Y two predominant substrate TVPE hoves	
BLDR SLABS (16 pts)       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       00%       0%       00%       0% <td></td> <td></td>		
BOULDER (>256 mm) [15 pts]       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%       0%		Points
Image: Cobstruct (12:pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0.00%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (9 pts)       0.00%       0%       0%       0%         Image: Cobstruct (2:e4 mm) (2:e5 mm) (2:e6 mt)       0.00%       0%       0%       0%         Image: Cobstruct (2:e6 mt)       0.00%       0.00%       0.00%       0%       0%       0%       0%		Substrate
Image: San Dick Contemporation of parts       20%       Image: San Dick Contemporation       00%       0%       0%         Bide Stabs, Boulder, Cobble, Bedrock       0.00%       (A)       Image: San Dick Contemporation       00%       (B)         Score of two Most Precominate Substrate types:       12       Image: San Dick Contemporation       (Check ONL Yone box):       > 5 cm - 10 cm [15 pts]       > 5 cm - 10 cm [15 pts]       20         > 30 centimeters [20 pts]       Score of 7 - 13]       Some of 20 pts]       Image: Score of 7 - 13]       21         > 4.0 meters (13) [30 pts]       Store of 7 - 13]       Store (12 pts]       Store (12 pts]       20         Some - 10 on (15 pts]       Store (12 pts]       Image: Store (12 pts]       21       20         > 4.0 meters (13) [30 pts]       Store (12 pts]       Store (12 pts]       21       3         Some - 10 on (15 pts]       Store (12 pts]       Store (12 pts]       20         Store (13) [30 pts]       Store (13 pts]       Store (12 pts]       21         Store (13 pts]       Store (12 pts]       Store (12 pts]       21         Store (13 pts]       Store (12 pts]       Store (12 pts]       21         Comments       Average BankKrull with H as stooking downstream 2x       15         Mature Forest, Wetand <t< td=""><td></td><td>Max = 40</td></t<>		Max = 40
Image: Second		15
Bidr Stabs, Boulder, Cobble, Bedrock, Curvers       12       TOTAL NUMBER OF SUBSTRATE TYPES:       3         SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:       12       TOTAL NUMBER OF SUBSTRATE TYPES:       3         • Maximum Pool Depth (Measure the maximum pool depth within the 61 femeter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)       (Check ONLY one box):       > 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]       > 22.5 cm [25 pts]       20         > 10 - 22.5 cm [25 pts]       > 10 - 22.5 cm [25 pts]       > 10 - 15 m (> 3' 3' - 4' 8') [15 pts]       20         > 4.0 meters (> 13) [30 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       20         > 4.0 meters (> 13) [30 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       20         > 4.0 meters (> 13) [30 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       > 1.0 m + 1.5 m (> 3' 3' - 4' 8') [15 pts]       20         This information must also be completed       RIPARIAN ZONE AND FLOODPLAIN QUALITY       AVERAGE BANKFULL WIDTH [set : 4.00]       15         This information must also be completed       RIPARIAN ZONE AND FLOODPLAIN QUALITY       AVERAGE BANKFULL WIDTH [set : 4.00]       15         L R       (Per Bank)       L R       (Most Predominant per Bank)       L R       Conservation Tillage		
2.       Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): <ul> <li>&gt; 30 centimeters [20 pts]</li> <li>&gt; 22.5 - 30 cm [25 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>MAXIMUM POOL DEPTH [mcbes]</li> <li>3.</li> <li>BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):         <ul> <li>&gt; 4.0 m (± 9' 7' - 13') [25 pts]</li> <li>&gt; 1.5 m - 3.0 m (+ 9' 7' - 4''8') [20 pts]</li> <li>&gt; 1.5 m - 3.0 m (+ 9' 7' - 4''8') [20 pts]</li> <li>&gt; 1.5 m - 3.0 m (+ 9' 7' - 4''8') [20 pts]</li> <li>COMMENTS</li> <li>AVERAGE BANKFULL WIDTH [Feet: 4.00]</li> </ul> </li> <li>This information must also be completed</li> <li>RIPARIAN VIDITH</li> <li>FLOOPLAIN QUALITY</li> <ul> <li>AVOTE: River Left (L) and Right (R) as looking downstream A: RIPARIAN WIDTH</li> <li>Fload (Moderate 5-10 m)</li> <li>Mature Forest, Wetland</li> <li>Conservation Tillage</li> <li>Moderate 5-10 m)</li> <li>Immature Forest, Shrub or Old</li> <li>Urban or Industrial</li> <li>Narrow &lt;5m</li> <li>Reidential, Park, New Field</li> <li>Open Pasture, Row Crop</li> <li>None</li> <li>Fenced Pasture</li> <li>Mining or Construction</li> <li>COMMENTS [row</li> <li>Subustria flow ing looking (Interstitial)</li> <li>COMMENTS [perennial</li> </ul> </ul>	Bldr Slabs, Boulder, Cobble, Bedrock	A + B
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONL Y one box):       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       > 5 cm - 10 cm [15 pts]         > 10 - 22.5 cm [25 pts]       NO WATER OR MOIST CHANNEL [0 pts]         COMMENTS       MAXIMUM POOL DEPTH[methas       12         3.       BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):       > 10 m - 1.5 m (s 3' 3' + 4' 8') [15 pts]       > 10 m - 1.5 m (s 3' 3' + 4' 8') [15 pts]         > 4.0 meters (s 13) [30 pts]       > 10 m (-1.5 m (s 3' 3' + 4' 8') [15 pts]       > 10 m (-2.9' 7' - 4' 8') [20 pts]       15         COMMENTS       AVERAGE BANKFULL WIDTH [methas       12       15         This information must also be completed       RIPARIAN ZONE AND FLOODPLAIN QUALITY       AVERAGE BANKFULL WIDTH [methas       15         Image: the provide a stream extrements with the provide of the provide and the provide of the pro		
→ 30 centimeters [20 pts]       → 5 cm · 10 cm [15 pts]       < 5 cm [5 pts]		
> 10 - 22.5 cm [25 pts]       NO WATER OR MOIST CHANNEL [0 pts]       20         COMMENTS       MAXIMUM POOL DEPTH Inches       12         3       BANK FULL WIDTH (Measured as the average of 3-4 measurements)       (Check ONLY one box):       12         3.0       +4.0 meters (> 13) [30 pts]       > 1.0 m +1.5 m (> 3' 3' - 4' 8') [15 pts]       30 m + 4.0 m (> 9' 7' - 4' 8') [20 pts]       10 m (<=3' 3') [5 pts]	> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
3.       BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):		20
→ 4.0 meters (> 13) [30 pts]       → 1.0 m (> 3' 3' - 4' 8') [15 pts]       Width Max=30         > 3.0 m (> 9' 7' - 13) [25 pts]       → 1.0 m (<=3' 3') [5 pts]	COMMENTS MAXIMUM POOL DEPTH Inches 12	
> 3.0 m · 4.0 m (> 9' 7' · 13) [25 pts]       ≤ 1.0 m (<=3' 3') [5 pts]	3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 1.5 m - 3.0 m (> 9' 7' - 4' 8') [20 pts]       AVERAGE BANKFULL WIDTH Feet : 4.00       15         COMMENTS       AVERAGE BANKFULL WIDTH Feet : 4.00       15         Image: Comment in the image: Comment in th		
This information must also be completed         RIPARIAN ZONE AND FLOODPLAIN QUALITY       ŵNOTE: River Left (L) and Right (R) as looking downstream ŵ         RIPARIAN WIDTH       FLOODPLAIN QUALITY       ŵNOTE: River Left (L) and Right (R) as looking downstream ŵ         Image: Particular and the state of the st		
RIPARIAN ZONE AND FLOODPLAIN QUALITY         RIPARIAN WIDTH       FLOODPLAIN QUALITY         RIPARIAN WIDTH       FLOODPLAIN QUALITY         Wide >10m       Residentiant per Bank)       Residentiant per Bank)         Moderate 5-10m       Residential, Park, New Field       Conservation Tillage         Narrow <5m	COMMENTS AVERAGE BANKFULL WIDTH Feet : 4.00	15
RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream *         RIPARIAN WIDTH       FLOODPLAIN QUALITY         L       R         (Per Bank)       L         Moderate 5-10m       Mature Forest, Wetland         Moderate 5-10m       Immature Forest, Shrub or Old         Narrow <5m		
L R (Per Bank) L R (Most Predominant per Bank) L R   Vide >10m Immature Forest, Wetland Immature Forest, Shrub or Old Urban or Industrial   Moderate 5-10m Immature Forest, Shrub or Old Immature Forest, Shrub or Old Urban or Industrial   Narrow <5m		
Wide >10m Mature Forest, Wetland Conservation Tillage   Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial   Narrow <5m		
Image: Sinuesting      Field Field Open Pasture, Row Crop Open Pasture, Row Crop Mining or Construction COMMENTS row FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS perennial SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Wide >10m Mature Forest, Wetland Conservation Tillage	
Narrow <sm< td=""> Residential, Park, New Field     None Fenced Pasture     COMMENTS     FLOW REGIME (At Time of Evaluation)     (Check ONLY one box):     Stream Flowing   Subsurface flow with isolated pools (Interstitial)   COMMENTS     Dry channel, no water (Ephemeral)     COMMENTS     SINUOSITY (Number of bends per 61 m (200 ft) of channel)   (Check ONLY one box):</sm<>	Field Field	
COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS perennial  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	ор
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):         Stream Flowing         Subsurface flow with isolated pools (Interstitial)         COMMENTS         perennial    SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):		1
Stream Flowing       Moist Channel, isolated pools, no flow (Intermittent)         Subsurface flow with isolated pools (Interstitial)       Dry channel, no water (Ephemeral)         COMMENTS       perennial         SINUOSITY (Number of bends per 61 m (200 ft) of channel)       (Check ONLY one box):		-
COMMENTS perennial SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	<i>i</i> )
		1
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	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)		100 ft)

	M DESIGNATED USE(S)				
WWH Name: Dining			Distance	e from Evaluated Stream	0.00
CWH Name:			Distance	from Evaluated Stream	
EWH Name:			Distance	from Evaluated Stream	
MAPPING: AT	TACH COPIES OF MAPS, INCLU	IDING THE <u>ENTIRE</u> WAT	ERSHED AREA. CL	LEARLY MARK THE SITE L	OCATION
USGS Quadrangle Name	Scio	NRCS Sc	il Map Page:	NRCS Soil Map Stream	Order
County: Carroll			Perry		
		Township / City:_			
MISCELLANE	OUS				
Base Flow Conditions? (	Y/N):_ <b>Y</b> Date of last prec	ipitation:06/05/1	8 Quant	tity: <b>0.11</b>	
Photograph Information:	3 photos				
Elevated Turbidity? (Y/N)	): _ <b>N</b> Canopy (% op	en): <b>100%</b>			
	for water chemistry? (Y/N):		orid and attach u	results) Lab Number:	
	p (°C) Dissolved Oxyge		S.U.) Co	onductivity (µmhos/cm)	
Is the sampling reach rep	presentative of the stream (Y/N)	Y If not, please exp	lain:		
<u> </u>					
Additional comments/des		tions. Voucher collections	; optional. NOTE: all	l voucher samples must be la	abeled wi
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N)	oriate field data sheets from	n the Primary Headv	water Habitat Assessment Ma er? (Y/N)	anual) N
BIOTIC EVAL Performed? (Y/N):N Fish Observed? (Y/N)N	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N)	oriate field data sheets from	The Primary Headv Y/N) N Vouche	water Habitat Assessment Ma er? (Y/N)	anual) N
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N)	oriate field data sheets from	The Primary Headv Y/N) N Vouche	water Habitat Assessment Ma er? (Y/N)	anual) N
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Observed	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N)	oriate field data sheets from	The Primary Headv Y/N) N Vouche	water Habitat Assessment Ma er? (Y/N)	anual) N
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology:	oriate field data sheets from alamanders Observed? ( N) Aquatic Macroin	Y/N) N Vouche vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N)
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N)	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) <mark>N</mark> ted):
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology:	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) <mark>N</mark> t <b>ted):</b>
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology:	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) N ted):
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology:	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) <mark>N</mark> ted):
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology:	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) <mark>N</mark> ted):
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology: G AND NARRATIVE DES landmarks and other features	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) <mark>N</mark> t <b>ted):</b>
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bi	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology: G AND NARRATIVE DES landmarks and other features	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) N ted): m's loca
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bit	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology: G AND NARRATIVE DES landmarks and other features	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) N ted): m's loca
BIOTIC EVAL Performed? (Y/N): N Fish Observed? (Y/N) N Frogs or Tadpoles Obser Comments Regarding Bit	UATION (If Yes, Record all observa ID number. Include approp Voucher? (Y/N) N Sa rved? (Y/N) N Voucher? (Y/N ology: G AND NARRATIVE DES landmarks and other features	criate field data sheets from alamanders Observed? ( Aquatic Macroins Aquatic Macroins CRIPTION OF STR	n the Primary Headw Y/N) N Voucho vertebrates Observe	vater Habitat Assessment Ma er? (Y/N) N ed? (Y/N) N Voucher? (	anual) Y/N) N ted):

PHW I Form Page - 2

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**Reset Form** 

Stream PB-04	]
ChieEPA Primary Headwater Habitat Evaluation Form 23	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-0	2
SITE NUMBER PB-04 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.04	
LENGTH OF STREAM REACH (ft) 120 LAT. 40.44341 LONG81.04988 RIVER CODE RIVER MILE	_
DATE 06/06/18 SCORER MDT, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERING         MODIFICATIONS:       appears some impact from prior powerline work	Y
1.       SUBSTRATE (Estimate percent of every type of substrate 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.	IEI
	tric
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	strate
BEDROCK 16 pti V% LILE FINE DETRITUS 13 ptsi V/	= 40
$\square \square $	~
SAND (<2 mm) [6 pts]	3
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B) A +	·B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft)</i> evaluation reach at the time of Pool	Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	= 30
> 22.5 - 30 cm [30 pts]      < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	'
COMMENTS MAXIMUM POOL DEPTH Inches 2	
	nkfull dth
= 3.0  m - 4.0  m (> 9' 7'' - 13') [25  pts]  Max Max	(=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
	<b>,</b>
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY	
<u>L R</u> (Per Bank) <u>L R</u> (Most Predominant per Bank) <u>L R</u>	
Wide >10m       Mature Forest, Wetland       Conservation Tillage         Madazata 5, 10m       Immature Forest, Shrub or Old       Ultrage or laduatrial	
Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None     Fenced Pasture     Mining or Construction     COMMENTS     row	
<b>FLOW REGIME</b> (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 ephemeral	
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	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)	

ADDITIONAL STREAM INF	FORMATION (This Information Must Als	so be Completed):		
QHEI PERFORM	IED? - Yes 🖌 No QHEI Score	(If Yes, Atta	ach Completed QHEI Form	)
DOWNSTREAM	DESIGNATED USE(S)			
WWH Name: Dining F			Distance from Evaluate	d Stream 0.19
			Distance from Evaluated	_
EWH Name:			Distance from Evaluated	
	CH COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHEI	DAREA. CLEARLY MARK	THE SITE LOCATION
USGS Quadrangle Name:	Scio	NRCS Soil Map F	Page: NRCS Soil I	Map Stream Order
County: Carroll	Том	nship / City:Perry		
MISCELLANEOU	JS			
Base Flow Conditions? (Y/N	N):_Y Date of last precipitation:	06/05/18	Quantity: 0.11	
Photograph Information:	photos			
Elevated Turbidity? (Y/N): _	N Canopy (% open): 10	0%		
Were samples collected for	r water chemistry? (Y/N): _N (Note la	ab sample no. or id.	and attach results) Lab Nur	mber:
Field Measures: Temp (		pH (S.U.)	Conductivity (µmh	ios/cm)
Is the sampling reach repre	esentative of the stream (Y/N) Y If no	ot, please explain:		
Additional comments/descr	iption of pollution impacts:			
BIOTIC EVALUA	ATION			
N				
Performed? (Y/N):	(If Yes, Record all observations. Vouch		-	
	ID number. Include appropriate field da	ata sheets from the Pr	imary Headwater Habitat Ass	sessment Manual)
Fish Observed? (Y/N)	Voucher? (Y/N) N Salamanders	Observed? (Y/N) N	Voucher? (Y/N)	N
Frogs or Tadpoles Observe	ed? (Y/N) N Voucher? (Y/N) Aqu	atic Macroinvertebra	ites Observed? (Y/N)	Voucher? (Y/N)
Comments Regarding Biolo			N	
include important la	ndmarks and other features of interest f	or site evaluation at	nd a narrative description	
		-		
	_			
	s-mdt-6/6/20108-02			
FLOW 🔫 🛁				
,				T-Line ROW Edge
$\backslash$				
T-Line ROW Edge	slope			
/				
	PHWH	l Form Page - 2		

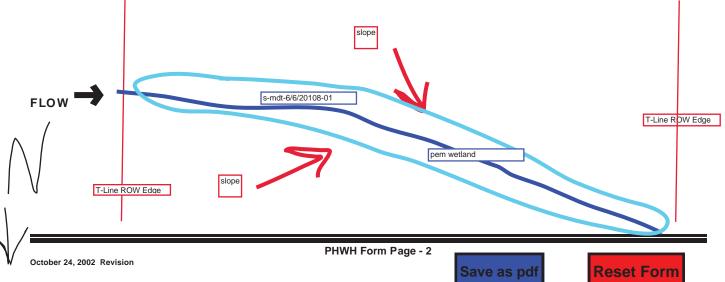
October 24, 2002 Revision

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**Reset Form** 

Stream PB-05	5
ChieEPA Primary Headwater Habitat Evaluation Form 28	1
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-	01
SITE NUMBER <b>PB-05</b> RIVER BASIN <b>05040001</b> DRAINAGE AREA (mi²) <b>0.01</b>	
LENGTH OF STREAM REACH (ft) 48 LAT. 40.44312 LONG81.05000 RIVER CODE RIVER MILE DATE 06/06/18 SCORER MDT, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVER         MODIFICATIONS:       appears some impact from prior powerline work	CT.
1. SUBSTRATE (Estimate percent of every type of substrate 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.	HEI etric
BLDR SLABS [16 pts] 0% SILT [3 pt] 45% PC	oints
BEDROCK 116 pti 0%	ostrate
☐         COBBLE (65-256 mm) [12 pts]         30%         ☐         CLAY or HARDPAN [0 pt]         0%	x = 40
GRAVEL (2-64 mm) [9 pts]     20%     MUCK [0 pts]     0%       SAND (<2 mm) [6 pts]	8
Bldr Slabs, Boulder, Cobble, Bedrock	+ B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
	I Depth x = 30
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓	
	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	nkfull
	/idth ax=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet 1.50	5
This information <u>must</u> also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R     (Per Bank)     L R     (Most Predominant per Bank)     L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction	
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)	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (Check ONLY one box)</u> :	
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 Als	so be Completed):
QHEI PERFORMED? - Yes 🖌 No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)         WWH Name:         CWH Name:         EWH Name:	Distance from Evaluated Stream       0.19         Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Scio	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Carroll Town	nship / City: Perry
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	06/05/18 Quantity: 0.11
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 10	0%
Were samples collected for water chemistry? (Y/N): (Note la	ab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Y	t, please explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
. ,	ner collections optional. NOTE: all voucher samples must be labeled with the site ata sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N)NVoucher? (Y/N)NSalamandersFrogs or Tadpoles Observed? (Y/N)NVoucher? (Y/N)Aqu	Observed? (Y/N) N Voucher? (Y/N) N atic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION	N OF STREAM REACH (This <u>must</u> be completed):
	or site evaluation and a narrative description of the stream's location
	1



Stream PB-06
ChieEPA Primary Headwater Habitat Evaluation Form 26
HHEI Score (sum of metrics 1, 2, 3) :
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-07
SITE NUMBER RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01
LENGTH OF STREAM REACH (ft) 218 LAT. 40.42673 LONG81.05012 RIVER CODE RIVER MILE
DATE 06/06/18 SCORER MDT, TMQ COMMENTS ephemeral flow regime
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       appears some impact from landowner/livestock
1. SUBSTRATE (Estimate percent of every type of substrate 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%     I     SILT [3 pt]     25%
BOULDER (>256 mm) [16 pts]
BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%         Max = 4           COBBLE (65-256 mm) [12 pts]         0%         CLAY or HARDPAN [0 pt]         10%
GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts] 0%
SAND (<2 mm) [6 pts]
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth (Measure the maximum pool depth
evaluation. Avoid plunge pools from road culverts or storm water pipes)       (Check ONLY one box):       Max = 3         > 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]
→       > 22.5 - 30 cm [30 pts]         →       > 10 - 22.5 cm [25 pts]         →       NO WATER OR MOIST CHANNEL [0 pts]
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfu
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width         > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] $\checkmark$ 5 1.0 m (<=3' 3") [5 pts]
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
COMMENTS AVERAGE BANKFULL WIDTH Feet 1.00 5
This information <u>must</u> also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY
L R (Per Bank) L R (Most Predominant per Bank) L R Vide >10m Mature Forest, Wetland Conservation Tillage
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop
None Fenced Pasture Mining or Construction
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)
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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Compl	eted):
QHEI PERFORMED? - Yes 🗸 No QHEI Score (If Y	es, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Irish Creek	_ Distance from Evaluated Stream 0.76
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATI	ERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Scio NRCS So	il Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City:_	Rumley
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:06/05/1	8 Quantity: 0.11
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
N	b. or id. and attach results) Lab Number:
	S.U.) Conductivity (µmhos/cm)
v	
	Idili.
Additional comments/depariation of pollution imports:	
Additional comments/description of pollution impacts:	
L	
ID number. Include appropriate field data sheets from         Fish Observed? (Y/N)         N         Voucher? (Y/N)         N	optional. NOTE: all voucher samples must be labeled with the site n the Primary Headwater Habitat Assessment Manual) Y/N) N Voucher? (Y/N) N vertebrates Observed? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF STRI	
Include important landmarks and other features of interest for site evalue	ation and a narrative description of the stream's location
slope	
	pem wetland
s-mdt-6/6/20106-07	
FLOW	
	T-Line RDW Edge
slope	
T-Line ROW Edge	
I. Construction of the second s	
October 24, 2002 Revision PHWH Form Page	

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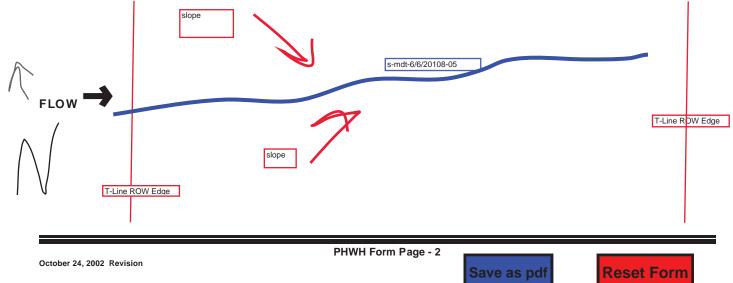
Stream PB-07	
ChieFPA Primary Headwater Habitat Evaluation Form 35	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-06	3
SITE NUMBER RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.09	4
LENGTH OF STREAM REACH (ft) 191 LAT. 40.42625 LONG81.05006 RIVER CODE RIVER MILE DATE 06/06/18 SCORER MDT, TMQ COMMENTS intermittent flow regime	-
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: appears some impact from landowner/livestock	
1. SUBSTRATE (Estimate percent of every type of substrate 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	IEI tric
BLDR SLABS [16 pts] 0% SILT [3 pt] 15% Poin	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%         Subst	
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	= 40
GRAVEL (2-64 mm) [9 pts]       75%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	5
Total of Percentages of a conv (A) Substrate Percentage (B)	
Bidr Slabs, Boulder, Cobble, Bedrock 0.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	Б
	Denth
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 [5 pts]	
> 10 - 22.5 cm [25 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
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] Wid	
= 3.0  m - 4.0  m (> 9' 7'' - 13') [25  pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 2.00 5	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
✓       Wide >10m       Mature Forest, Wetland       Conservation Tillage         Moderate 5-10m       ✓       Immature Forest, Shrub or Old       Urban or Industrial	
Narrow <5m	
COMMENTS row	
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_intermittent	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
$\square 0.5 \qquad \boxed{ 1.5 } \qquad \boxed{ 2.5 } \qquad \boxed{ >3 }$	
STREAM GRADIENT ESTIMATE         Flat (0.5 ft/100 ft)         Flat to Moderate         Moderate (2 ft/100 ft)         Moderate to Severe	

ADDITIONAL STREAM INFORMATION (This Information Must Also b	e Completed):
QHEI PERFORMED? - Yes 🗸 No QHEI Score	(If Yes, Attach Completed QHEI Form)
JOWNSTREAM DESIGNATED USE(S)         WWH Name:       Irish Creek         CWH Name:       EWH Name:	
	RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Scio	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township	p / City:Rumley
MISCELLANEOUS Base Flow Conditions? (Y/N):_Y Date of last precipitation:	06/05/18 Quantity: 0.11
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab same	ample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, pla	ease explain:
BIOTIC EVALUATION         Performed? (Y/N):       N         (If Yes, Record all observations. Voucher clip number. Include appropriate field data slip         Fish Observed? (Y/N)       N         Voucher? (Y/N)       N	ollections optional. NOTE: all voucher samples must be labeled with the site heets from the Primary Headwater Habitat Assessment Manual) erved? (Y/N) N Voucher? (Y/N) N Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
	PF STREAM REACH (This <u>must</u> be completed): ite evaluation and a narrative description of the stream's location s-mdt-6/6/20108-06 T-Line RDW Edge
PHWH For	rm Page - 2
October 24, 2002 Revision	Save as pdf Reset Form

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Stream PB-08	;
ChieEPA Primary Headwater Habitat Evaluation Form	1
HHEI Score (sum of metrics 1, 2, 3) :	<u> </u>
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-0	)5
SITE NUMBER PB-08 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 116 LAT. 40.42551 LONG81.05022 RIVER CODE RIVER MILE	
DATE 06/06/18 SCORER MDT, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS: appears some impact from landowner to straighten	Y
	HEI
	etric
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	strate
BEDROCK [16 pt] 0% FINE DETRITOS [3 pts] 0%	$\kappa = 40$
GRAVEL (2-64 mm) [9 pts]     20%     MUCK [0 pts]     0%	-
SAND (<2 mm) [6 pts]	7
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A -	+ B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft</i> ) evaluation reach at the time of Pool	Depth
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]	κ = 30
	_
> 10 - 22.5 cm [25 pts]	<b>`</b>
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	nkfull idth
$\square > 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}]$ $\blacksquare \le 1.0 \text{ m} (<=3' 3") [5 \text{ pts}]$ Max	x=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L_R     (Per Bank)     L_R       (Most Predominant per Bank)     L_R	
Wide >10m     Mature Forest, Wetland     Conservation Tillage       Immature Forest, Shrub or Old     Understand to the serve to the s	
Field	
Narrow <5m         Residential, Park, New Field         Open Pasture, Row Crop	
None     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)	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (Check ONLY one box):</u>	
None     1.0     2.0     3.0       0.5     1.5     2.5     >3	
STREAM GRADIENT ESTIMATE	
Image: Stream GRADIENT ESTIMATE         Image: Stream GRADIENT ESTIMATE <td></td>	

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:       Irish Creek         CWH Name:       Distance from Evaluated Stream         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: Scio NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Rumley
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/18 Quantity: 0.11
Photograph Information: _3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
BIOTIC EVALUATION Performed? (Y/N):N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf

Stream PB-09	
ChieEPA Primary Headwater Habitat Evaluation Form 35	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-10	<u> </u>
SITE NUMBER PB-09 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.04	<u> </u>
LENGTH OF STREAM REACH (ft) 166 LAT. 40.42072 LONG81.05074 RIVER CODE RIVER MILE	4
DATE 06/06/18 SCORER MDT, TMQ COMMENTS intermittent flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
<b>STREAM CHANNEL</b> NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY <b>MODIFICATIONS:</b>	
	-
1.       SUBSTRATE (Estimate percent of every type of substrate 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.	ĘI
TYPE     PERCENT     TYPE     PERCENT     Metr       BLDR SLABS [16 pts]     0%     ✓     SILT [3 pt]     20%	
BOULDER (>256 mm) [16 pts]	rate
Image: BedRock [16 pt]         0%         Image: Fine Detritus [3 pts]         0%         Substr           Image: COBBLE (65-256 mm) [12 pts]         0%         Image: CLAY or HARDPAN [0 pt]         0%         Max =	
GRAVEL (2-64 mm) [9 pts] 65% MUCK [0 pts] 0%	
SAND (<2 mm) [6 pts]         15%         ARTIFICIAL [3 pts]         0%	
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A + E	3
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool D	
evaluation. Avoid plunge pools from road culverts or storm water pipes)       (Check ONLY one box):       Max =         > 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]	= 30
> 22.5 - 30 cm [30 pts]         < 5 cm [5 pts]	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank	full
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Widt	th
$ = 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}] \\ > 1.5 \text{ m} - 3.0 \text{ m} (> 9' 7" - 4' 8") [20 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3"$	:30
COMMENTS AVERAGE BANKFULL WIDTH Feet : 2.00 5	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None 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)	
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	

QHEI PERFORMED? - Yes 🗸 No QHE	I Score (If )	Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)		
CWH Name:		Distance from Evaluated Stream Distance from Evaluated Stream
	JDING THE <u>ENTIRE</u> WAT	ERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name:_Scio	NRCS So	bil Map Page: NRCS Soil Map Stream Order
County: Harrison	Township / City:_	Rumley
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Y _ Date of last pred	cipitation: 06/05/1	8 Quantity: 0.11
Photograph Information: _3 photos	···	
	nen). <b>100%</b>	
Elevated Turbidity? (Y/N): _ N Canopy (% op		
Were samples collected for water chemistry? (Y/N):	(Note lab sample n	o. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxyge	en (mg/l) pH	(S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	Y If not, please exp	plain:
Additional comments/description of pollution impacts:		
Fish Observed? (Y/N) N Voucher? (Y/N) N S Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N Comments Regarding Biology:	alamanders Observed? ( N) N Aquatic Macroin	(Y/N) N Voucher? (Y/N) N vertebrates Observed? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DES	CRIPTION OF STR	EAM REACH (This <u>must</u> be completed):
		uation and a narrative description of the stream's locat
	_	
slop	De	
	$ \rightarrow $	T-Line R
slope		s-mdt-6/6/20108-10
T-Line ROW Edge		
1		
	PHWH Form Page	e - 2

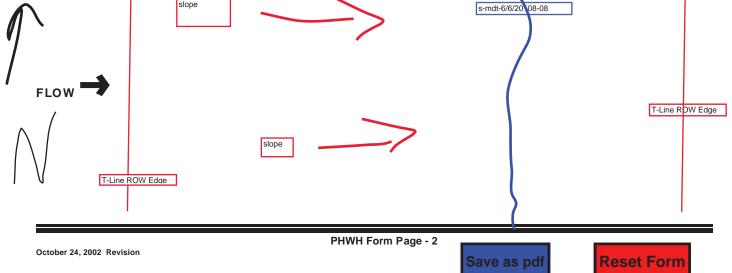
Stream PB-10	
ChieFPA Primary Headwater Habitat Evaluation Form 26	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-09	]
SITE NUMBER PB-10 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.02	4
LENGTH OF STREAM REACH (ft)       92       LAT.       40.41043       LONG.       -81.05195       RIVER CODE       RIVER MILE         DATE       06/06/18       SCORER       MDT, TMQ       COMMENTS       ephemeral flow regime	4
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS: channelized for culvert	
1. SUBSTRATE (Estimate percent of every type of substrate 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% Point	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         Image: Fine Detritus [3 pts]         0%         Substration	
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	40 一
GRAVEL (2-64 mm) [9 pts]       40%       Image: MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	
Total of Percentages of (A) Substrate Percentage (B)	
Bldr Slabs, Boulder, Cobble, Bedrock TOLOU% (X) TOTAL NUMBER OF SUBSTRATE TYPES: 4	,
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth	onth
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]       ✓	
> 10 - 22.5 cm [25 pts]	
COMMENTS MAXIMUM POOL DEPTH	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfr > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width	
$\square > 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}] \qquad \qquad$	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet 1. 1.00 5	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ************************************	
LR (Per Bank) LR (Most Predominant per Bank) LR	
✓       Wide >10m       Mature Forest, Wetland       Conservation Tillage         Moderate 5-10m       ✓       Immature Forest, Shrub or Old       Urban or Industrial	
Narrow <5m	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
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	

	Distance from Evaluated Stream 0.56
WWH Name: Irish Creek	
_CWH Name:	Distance from Evaluated Stream
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
ISGS Quadrangle Name: Scio	NRCS Soil Map Page: NRCS Soil Map Stream Order
	nship / City:Rumley
MISCELLANEOUS	nsnip / Gity
ase Flow Conditions? (Y/N):_Y Date of last precipitation:_	06/05/18 Quantity: 0.11
hotograph Information: 3 photos	Quantity
	00%
	lab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N)	ot, please explain:
<u> </u>	
dditional comments/description of pollution impacts:	
rish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqu Comments Regarding Biology:	Cobserved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTIO	N OF STREAM REACH (This <u>must</u> be completed):
	N OF STREAM REACH (This <u>must</u> be completed): for site evaluation and a narrative description of the stream's loca
Include important landmarks and other features of interest	for site evaluation and a narrative description of the stream's loca
Include important landmarks and other features of interest	for site evaluation and a narrative description of the stream's loca

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

Stream PB-11	
ChieFPA Primary Headwater Habitat Evaluation Form 46	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/06/2018-08	]
SITE NUMBER PB-11 RIVER BASIN 05040001 DRAINAGE AREA (mi <sup>2</sup> ) 0.45	1
LENGTH OF STREAM REACH (ft) 680 LAT. 40.40730 LONG81.05164 RIVER CODE RIVER MILE	_
DATE 06/06/18 SCORER MDT, TMQ COMMENTS intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	;
<b>STREAM CHANNEL</b> NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:	
MODIFICATIONS.	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	EI
TYPE PERCENT TYPE PERCENT Dein	ric
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt] 0% Substr Max =	
□       COBBLE (65-256 mm) [12 pts]       20%       □       CLAY or HARDPAN [0 pt]       0%         □       ✓       GRAVEL (2-64 mm) [9 pts]       30%       □       MUCK [0 pts]       0%	
Image: Sand (<2 mm) [6 pts]	
Total of Percentages of 20.00% (A) Substrate Percentage 100% (B) A + B	<b></b> ]
Bldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth	onth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max =	
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       < 5 cm [5 pts]	-
> 10 - 22.5 cm [25 pts]	
COMMENTS MAXIMUM POOL DEPTH Inches 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankf	
= > 4.0  meters  (> 13') [30  pts] = > 1.0  m - 1.5  m (> 3' 3" - 4' 8") [15  pts]  Width $ = 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts]$	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 3.00 5	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTHFLOODPLAIN QUALITYL R (Per Bank)L R (Most Predominant per Bank)L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None 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)	
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 (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:       Irish Creek       Distance from Evaluated Stream       0.24         CWH Name:       Distance from Evaluated Stream       Distance from Evaluated Stream         EWH Name:       Distance from Evaluated Stream       Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Scio NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Rumley
MISCELLANEOUS
Base Flow Conditions? (Y/N):_ Y Date of last precipitation: 06/05/18 Quantity: 0.11
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): _ N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures:       Temp (°C)       Dissolved Oxygen (mg/l)       pH (S.U.)       Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
slope s-mdt-6/6/20\08-08



Stream PB-13	
ChieEPA Primary Headwater Habitat Evaluation Form 35	
HHEI Score (sum of metrics 1, 2, 3) :	j
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/07/2018-03	5
SITE NUMBERRIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	4
LENGTH OF STREAM REACH (ft) 105 LAT. 40.39726 LONG81.05197 RIVER CODE RIVER MILE	4
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL       Image: None / Natural Channel       Image: Recovering	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	El
Delta BLDR SLABS [16 pts]         0%         Delta SILT [3 pt]         10%         Point	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%	trate
□       COBBLE (65-256 mm) [12 pts]       20%       □       CLAY or HARDPAN [0 pt]       0%	= 40
GRAVEL (2-64 mm) [9 pts]     60%     MUCK [0 pts]     0%     25       SAND (<2 mm) [6 pts]	5
ARTIFICIAL [3 pts]	
Total of Percentages of 20.00% (A) Substrate Percentage 100% (B) A + E	В
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max =	•
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	= 30
> 22.5 - 30 cm [30 pts]         ✓         < 5 cm [5 pts]	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank	cfull
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width	th
$ = 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}] \\ = 1.5 \text{ m} - 3.0 \text{ m} (> 9' 7" - 4' 8") [20 \text{ pts}] \\ = 1.5 \text{ m} - 3.0 \text{ m} (> 9' 7" - 4' 8") [20 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5  p$	=30
COMMENTS AVERAGE BANKFULL WIDTH Feet 1.50 5	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODF LAIN QUALITY     ANOTE: River Len (E) and Right (R) as looking downstream A       RIPARIAN WIDTH     FLOODFLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Vide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old	
Image: A second contract of the second contract of	
None   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 ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
STREAM GRADIENT ESTIMATE         Flat (0.5 ft/100 ft)         Flat to Moderate         Moderate (2 ft/100 ft)         Moderate to Severe	

ADDITIONAL STREAM INFORMATION (This Information Must Also b	be Completed):
QHEI PERFORMED? - Yes 🖌 No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream 0.49 miles
EWH Name:	Distance from Evaluated Stream
	IRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
Co.ia	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ip / City: Rumley
MISCELLANEOUS	p / Oity
Y	06/05/18 Quantity: 0.11
	06/05/18Quantity:0.11
Photograph Information: 3 photos	
	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mq/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, p	lease explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
	collections optional. NOTE: all voucher samples must be labeled with the site
	sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N)       N       Voucher? (Y/N)       N       Salamanders Observed?         Frogs or Tadpoles Observed? (Y/N)       N       Voucher? (Y/N)       N       Aquatic	served? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION C	OF STREAM REACH (This <u>must</u> be completed):
	site evaluation and a narrative description of the stream's location
slope	
s-mdt-6/7/20108-03	
FLOW	
	T-Line RDW Edge
slope	
V T-Line ROW Edge	

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PHWH Form Page - 2

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**Reset Form** 

Stream PB-14	
ChieFPA Primary Headwater Habitat Evaluation Form 35	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/07/2018-02	]
SITE NUMBER PB-14 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	1
LENGTH OF STREAM REACH (ft) 124 LAT. 40.39698 LONG81.05198 RIVER CODE RIVER MILE	_
DATE 06/07/18 SCORER MDT, TMQ COMMENTS ephemeral flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	•
<b>STREAM CHANNEL</b> NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY <b>MODIFICATIONS:</b>	
1. SUBSTRATE (Estimate percent of every type of substrate 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     Metr       Image: BLDR SLABS [16 pts]     0%     Image: SILT [3 pt]     15%     Percent	
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%         Substr           COBBLE (65-256 mm) [12 pts]         20%         CLAY or HARDPAN [0 pt]         0%	
GRAVEL (2-64 mm) [9 pts]     55%     MUCK [0 pts]     0%     25	
SAND (<2 mm) [6 pts]	
Total of Percentages of 20.00% (A) Substrate Percentage 100% (B) A + B	3
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft)</i> evaluation reach at the time of Pool Depth	epth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	: 30
<ul> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	
	<u></u>
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width	th
= 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts] $ = 3.0  m (<=3' 3") [5  pts] $ $ = 3.0  m (<=3' 3") [5  pts] $ $ = 3.0  m (<=3' 3") [5  pts]$	30
COMMENTS AVERAGE BANKFULL WIDTH Feet : 1.00 5	
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY · · · · 아이지는: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN ZONE AND FLOODFLAIN QUALITY     SNOTE: River Left (L) and Right (R) as looking downstream at the structure of the structure	
L R (Per Bank) L R (Most Predominant per Bank) L R Vide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None     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 ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
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	

	ted):		
QHEI PERFORMED? - Yes 🖌 No QHEI Score (If Yes	es, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)			
WWH Name: Irish Creek	Distance from Evaluated Stream	0.49	mile
_CWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream		-
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATER			
SGS Quadrangle Name: Scio NRCS Soil		m Order	-
Dunty: Harrison Township / City: F	Rumley		
MISCELLANEOUS			
use Flow Conditions? (Y/N):Y Date of last precipitation:06/05/18	Quantity: 0.11		
otograph Information: 3 photos			
evated Turbidity? (Y/N): _ N Canopy (% open): _ 100%			
	or id. and attach results) Lab Number:		
eld Measures: Temp (°C) Dissolved Oxygen (mq/l) pH (S.	.U.) Conductivity (µmhos/cm)		
the sampling reach representative of the stream (Y/N) If not, please expla	ain:		
Iditional comments/description of pollution impacts:			
rformed? (Y/N): (If Yes, Record all observations. Voucher collections o ID number. Include appropriate field data sheets from			he site
N		, 	
sh Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) ogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinver	/N) Voucher? (Y/N) Voucher? ertebrates Observed? (Y/N) Voucher?	(Y/N) N	
	N		
omments Regarding Biology:			
OMMENTS Regarding Biology:	AM REACH (This <u>must</u> be compl	eted):	
			n
DRAWING AND NARRATIVE DESCRIPTION OF STREA			n
DRAWING AND NARRATIVE DESCRIPTION OF STRE			n
DRAWING AND NARRATIVE DESCRIPTION OF STRE			n
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluat			n
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluat			n
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluat			
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluat		am's locatio	
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluat		am's locatio	

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Reset Form

Stream PB-15	
ChieEPA Primary Headwater Habitat Evaluation Form 34	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/07/2018-01	
SITE NUMBER PB-15 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.02	_
LENGTH OF STREAM REACH (ft) 151 LAT. 40.39632 LONG81.05200 RIVER CODE RIVER MILE	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       existing ROW causing some fill and grading to happen along stream	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	El
TYPE         PERCENT         TYPE         PERCENT         PERCENT         POINT           Image: Description of the state of the sta	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%         Substitution	trate
$\square \square $	= 40
GRAVEL (2-64 mm) [9 pts]     35%     MUCK [0 pts]     0%       SAND (<2 mm) [6 pts]	F
Total of Percentages of 45.00% (A) Substrate Percentage 100% (B) A + E	В
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
<ol> <li>Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</li> <li>Max =</li> </ol>	
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
<ul> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>✓ &lt; 5 cm [5 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank	cfull
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width         > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] $\checkmark$ $\le$ 1.0 m (<=3' 3") [5 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet 1.50 5	
This information <u>must</u> also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R     (Per Bank)     L R     (Most Predominant per Bank)     L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction COMMENTS ROW, forested on either end of ROW	
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)	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (Check ONLY one box):</u>	
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)	<u>):</u>
QHEI PERFORMED? - Yes 🗸 No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Irish Creek CWH Name:	Distance from Evaluated Stream 0.50 miles Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	IED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Scio NRCS Soil Ma	p Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Run	nley
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 06/05/18 Photograph Information: 3 photos	Quantity: 0.11
Elevated Turbidity? (Y/N): _ N Canopy (% open): _ 85%	d. and attach results) Lab Number:
Field Measures:       Temp (°C)       Dissolved Oxygen (mg/l)       pH (S.U.)         Is the sampling reach representative of the stream (Y/N)       Y       If not, please explain:	Conductivity (µmhos/cm)
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the         Fish Observed? (Y/N)         N         Voucher? (Y/N)         N         Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation	· <u> </u>
FLOW	in ROW]

Centerline

B

1

ROW Edge

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Stream PB-17,1	8,19
<b>ChieEPA</b> Primary Headwater Habitat Evaluation Form	36
HHEI Score (sum of metrics 1, 2, 3) :	30
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/07/2	018-05
SITE NUMBER PB-17,18,19 RIVER BASIN 05040001 DRAINAGE AREA (mi²)	.20
LENGTH OF STREAM REACH (ft) 89 LAT. 40.37679 LONG81.05317 RIVER CODE RIVER MILE	
DATE 06/07/18 SCORER MDT, TMQ COMMENTS intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVERY
MODIFICATIONS: recent impact from pipeline construction	
1. SUBSTRATE (Estimate percent of every type of substrate 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	HHEI Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 25%	Points
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%	Substrate
$\square \square COBBLE (65-256 mm) [12 pts] \qquad \boxed{15\%} \qquad \square \square CLAY or HARDPAN [0 pt] \qquad \boxed{0\%}$	Max = 40
GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts] 0%	16
SAND (<2 mm) [6 pts]	
Total of Percentages of 15.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft</i> ) evaluation reach at the time of	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
= > 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]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH	5
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY 차이어든: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODFLAIN QUALITY STRUTE. River Left (L) and Right (R) as looking downstream 32 RIPARIAN WIDTH FLOODFLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Moderate 5-10m Immature Forest, Shrub or Old	
	op
Image: Marrow <5m	
COMMENTS row	
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_intermittent	L
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (C</u> heck ONLY one box):	
None     Image: 1.0     Image: 2.0     3.0       0.5     Image: 1.5     Image: 2.5     Image: 3.0	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/1	00 ft)

CWH Name:       Distance from Evaluated Stream         MAPPING: ATTACH COPES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION         USGS Quadrangie Name;       Scio         County:       Harrison         Township / City:       Runnel Scio         Statuse from Evaluated Stream Order       ClearLY MARK THE SITE LOCATION         NISCS Cluarangie Name;       Scio         County:       Harrison         Township / City:       Runnel         Base Flow Conditions?       OVIN:         Photograph Information:       Sphotos         Elevated Turbidity?       (N):         Photograph Information:       Sphotos         Elevated Turbidity?       Ovin:         Ware samples collected for water chemistry?       (N):         North       Cancept (% open):       100%         Ware samples collected for water chemistry?       (N):       (North)         Is the sampling reach representative of the stream (V/N)       If not, please explain:	QHEI PERFORMED? - 🗌 Yes 🗸	No QHEI Score	(If Yes, Attach Completed	QHEI Form)		
CWH Name:       Distance from Evaluated Stream         MAPPING: ATTACH COPES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION         USGS Quadrangie Name;       Scio         County:       Harrison         Township / City:       Runnel Scio         Statuse from Evaluated Stream Order       ClearLY MARK THE SITE LOCATION         NISCS Cluarangie Name;       Scio         County:       Harrison         Township / City:       Runnel         Base Flow Conditions?       OVIN:         Photograph Information:       Sphotos         Elevated Turbidity?       (N):         Photograph Information:       Sphotos         Elevated Turbidity?       Ovin:         Ware samples collected for water chemistry?       (N):         North       Cancept (% open):       100%         Ware samples collected for water chemistry?       (N):       (North)         Is the sampling reach representative of the stream (V/N)       If not, please explain:						<b>_</b>
EWH Name:       Distance from Evaluated Stream         MAPPING: ATTACH COPES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION         USGS Quadrangle Name       Sclo         Device Conditions?       NRCS Soil Map Page:         NRCS Soil Map Page:       NRCS Soil Map Stream Order         County:       Harrison       Township / City.         MisCeLLANEOUS       Date of last precipitation:       06/05/18       Quantity:       0.11         Photograph Information:       By Potes       Photograph Information:       By Potes         Elevated Turbidity? (V/N):       N       (Note lab sample no. orid. and attach results) Lab Number:       Field Measures:         Field Measures:       Temp (*C)       Disolved Oxygen (mg/t)       pH (S U.)       Conductivity (umhosticm)       is the sampling reach representative of the stream (V/N)       If not, please explain:         Additional comments/description of pollution impacts:					0.04	mil
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION         JSGS Quadrangie Name;       Seio       NRCS Soil Map Page;       NRCS Soil Map Stream Order         County:       Harrison       Township / City;       Rumley         MISCELLANEOUS       Object       06/05/18       Quantity;       0.11         Photograph Information;       9 Photos       06/05/18       Quantity;       0.11         Photograph Information;       9 Photos       00%       0.11       0.11         Photos       Canopy (% open):       100%       00%       0.11       0.11         Photos       Canopy (% open):       100%       0.11       0.11       0.11         Photos       Canopy (% open):       100%       0.11       0.11       0.11         Were samples collected for water chemistry? (V/N):       N (Note lab sample no. or id. and attach results) Lab Number       0.11         State sampling reach representative of the stream (YN)       If not, please explain:       0.00       0.00         Validitional comments/description of pollution impacts:						-
JSGS Quadrangle Name:       Scio       NRCS Sol Map Page:       NRCS Sol Map Stream Order         County:       Itarritor       Township / City:       Rumley         MISCELLANEOUS       Saace Flow Conditions? (YN):       Date of last precipitation:       06/05/18       Quantity:       0.11         Photograph Information:       3 photos       100%       NRCs sol Map Stream Order       0.11         Photograph Information:       3 photos       100%       NRCs sol Map Stream Order       0.11         Photograph Information:       3 photos       100%       NRCs sol Map Stream Order       0.11         Photograph Information:       3 photos       100%       NRCs sol Map Stream Order       0.11         Store samples collected for water chemistry?       (YN)       N       Canopy (% open):       100%         Wore samples collected for water chemistry?       If NN       (NN)       (NN)       Conductivity (µmhos/cm)       100%         State sampling reach representative of the stream (YN)       If not, please explain:					DCATION	
Dounty:       Itarrison       Township / City:       Rumley         MISCELLANEOUS         Base Flow Conditions? (YMN):       Date of last precipitation:       06/05/18       Quantity:       0.11         Photograph Information:       3 photos       100%       Image: Conductivity (YMN):						
Bise Flow Conditions? (Y/N):       Date of last precipitation:       06/05/18       Quantity:       0.11         Photograph Information:       3 photos         Elevated Turbidity? (Y/N):       N       Canopy (% open):       100%         Were samples collected for water chemistry? (Y/N):       N       (Note lab sample no. or id. and attach results) Lab Number:         Field Measures:       Temp (*C)       Dissolved Oxygen (mg/l)       pH (S.U.)       Conductivity (µmhos/cm)         s the sampling reach representative of the stream (Y/N)       If not, please explain:		Township / 0	City:Rumley			
See of volidious S(1/V) Set of has, production (1/V) Set of has the samples collected for water chemistry? (Y/N): Nere sam						
Elevated Turbidity? (Y/N): N	Base Flow Conditions? (Y/N): Y Date	of last precipitation: 06/	05/18 Quantity:	0.11		
Were samples collected for water chemistry? (YIN): N   (Note lab sample no. or id. and attach results) Lab Number: ield Measures: Temp (*C) Dissolved Oxyger (mg/l) pH (S.U.) Conductivity (umhos/cm) at the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record at observations: Voucher collections optional. NO TE: all voucher samples must be labeled with the Doublet. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual) Trops or Tadpoles Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) N voucher? (Y/N) N voucher? (Y/N) N voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) N voucher? N	Photograph Information: 3 photos					]
Were samples collected for water chemistry? (Y/N): N   (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (*C) Dissolved Oxyger (mg/l) Dissolved Oxyger (mg/l) PH (S.U.) Conductivity (umhos/cm) Conductivity (umhos/cm) Badditional comments/description of pollution impacts: Badditional comments/fee (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a no stive description of the stream's location FLOW Browned for Education (Stream) Browned for		nopy (% open): <b>100%</b>				
Field Measures: Temp (*C)   Dissolved Oxygen (mg/l) pH (S.U.)   Conductivity (umhos/cm)   a the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: BIOTIC EVALUATION Performed? (Y/N): If yes, Record all observations. Voucher collections optional. NOTE: all vouchers samples must be labeled with the Double optiopriate field data sheets from the Primary Headwater Habitat Assessment Manual) Field Dissolved O; (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? Voucher? V/N Voucher? V/N Voucher? V/N Voucher? Voucher? V/N Voucher? Voucher? V/N Voucher? Voucher? Voucher? Voucher? Vou		(Y/N): N (Note lab same	ple no. or id. and attach resu	ults) Lab Number:		
Additional comments/description of pollution impacts: BIOTIC EVALUATION Performed? (Y/N): N (I Yes, Record all observations. Voucher collections optional. NO TE: all voucher samples must be labeled with the Doubler. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual). Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include Important landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important Landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important Landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important Landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Include Important Landmarks and other features of Interest for site evaluation and a no failve description of the stream's location Figure For Webe Stream Completed (Marching Completed): Figure For Webe Stream Completed (Marching Completed): Figure For Web Stream Completed (Marching Completed)			pH (S.U.) Condu	uctivity (µmhos/cm)		
Additional comments/description of pollution impacts: BIOTIC EVALUATION Performed? (Y/N): (I Yes, Record all observations. Voucher collections optional. NO TE: all voucher samples must be labeled with the iD number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual). Fish Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include Important landmarks and other features of interest for site evaluation and a no failve description of the stream's location For evaluation and a no failve description of the stream's location (NOTE: all COMPARIANCE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include Important landmarks and other features of interest for site evaluation and a no failve description of the stream's location (Include Importance (Include)	s the sampling reach representative of the str	ream (Y/N)	e explain:			
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location FLIOW Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location Think ROW Edge Important landmarks and other features of interest for site evaluation and a no ative description of the stream's location of the stream's location of the stream's location of the stream's location of the stream's loc						
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Performed? (Y/N) (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)						
Include important landmarks and other features of interest for site evaluation and a nr ative description of the stream's location some some some T-Line ROW Edge sope	Fish Observed? (Y/N) N Voucher? (Y/N	N) N Salamanders Observe	ed? (Y/N) Voucher?	(Y/N) N	N	
FLOW T-Line ROW Edge					-	
T-Line ROW Edge	· · · · · · · · · · · · · · · · · · ·		evaluation and a na value of	description of the strear	n's locatio	n
V T-Line ROW Edge		s-mdt-6/7/:	20108-05		T-Line R DW	' Edge
		•				
PHWH Form Page - 2						

Stream PB-20	)
ChieFPA Primary Headwater Habitat Evaluation Form 45	1
HHEI Score (sum of metrics 1, 2, 3) :	<u> </u>
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-0	5
SITE NUMBER PB-20 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.06	
LENGTH OF STREAM REACH (ft) 112 LAT. 40.36798 LONG81.05310 RIVER CODE RIVER MILE DATE 06/11/18 SCORER MDT, BAO COMMENTS Intermittent flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS: ripari impact due to ROW; culvert	T
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
TYPE DERCENT TYPE DERCENT ME	HEI etric
BLDR SLABS [16 pts]         0%         SILT [3 pt]         20%         PO	ints
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% Subs	strate ( = 40
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt]	. = 40
Image: Constraint of the second state of the second sta	5
Total of Percentages of 30.00% (A) Substrate Percentage 100% (B) A +	⊢ B
Bldr Slabs, Boulder, Cobble, Bedrock Check Check TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool	Depth
	c = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 3	
	nkfull idth
	x=30
COMMENTS Ohwm	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None 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 intermittent	
None $1.0$ $2.0$ $3.0$ $0.5$ $7$ $1.5$ $2.5$ $>3$	
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 V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)         WWH Name:         CWH Name:         EWH Name:	Distance from Evaluated Stream       1.05         Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett	NRCS Soil Map Page: NRCS Soil Map Stream Order
	hip / City:Rumley
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	06/11/18 Quantity: 0.47
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): _N (Note lab	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not,	please explain:
Additional comments/description of pollution impacts:	
ID number.         Include appropriate field data           Fish Observed? (Y/N)         N         Voucher? (Y/N)         Salamanders O	r collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual) bserved? (Y/N) N Voucher? (Y/N) N ic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
N N	site evaluation and a narrative description of the stream's location           hillslope           Culvert
FLOW	B-05 slope T-Line ROW Edge
PHWH F October 24, 2002 Revision	Form Page - 2 Save as pdf Reset Form

Stream PB-21	
<b>ChieEPA</b> Primary Headwater Habitat Evaluation Form 39	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-04	4
SITE NUMBER PB-21 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.10	
LENGTH OF STREAM REACH (ft)       135       LAT.       40.36397       LONG.       -81.05269       RIVER CODE       RIVER MILE         DATE       06/11/18       SCORER       MDT, BAO       COMMENTS       Intermittent flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:	Y
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	HEI etric
BLDR SLABS [16 pts] 0% SILT [3 pt] 20% Poi	ints
BEDROCK 16 pt 0% LIL FINE DETRITUS 13 pts 07	strate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	x = 40
Image: GRAVEL (2-64 mm) [9 pts]       40%       Image: MUCK [0 pts]       0%         Image: GRAVEL (2-64 mm) [6 pts]       30%       Image: GRAVEL (2-64 mm) [6 pts]       0%         Image: GRAVEL (2-64 mm) [6 pts]       30%       Image: GRAVEL (2-64 mm) [6 pts]       0%         Image: GRAVEL (2-64 mm) [6 pts]       30%       Image: GRAVEL (2-64 mm) [6 pts]       0%         Image: GRAVEL (2-64 mm) [6 pts]       30%       Image: GRAVEL (2-64 mm) [6 pts]       0%	9
Total of Percentages of (A) (A) Substrate Percentage (B)	
Bldr Slabs, Boulder, Cobble, Bedrock TOUCH A + TOTAL NUMBER OF SUBSTRATE TYPES: 4	. Б
	Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	x = 30
> 30 centimeters [20 pts]       ✓       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓       < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	5
COMMENTS MAXIMUM POOL DEPTH	
	nkfull dth
= 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts]	k=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS ohwm AVERAGE BANKFULL WIDTH Feet 2.00 5	
This information <u>must</u> also be completed	_
RIPARIAN ZONE AND FLOODPLAIN QUALITY SNOTE: River Left (L) and Right (R) as looking downstream SRIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial	
Image: Answer of the second	
None     Image: Residential, Park, New Field     Image: Residential, Park, New Field       Image: Residential, Park, New Field     Image: Residential, Park, New Field       Image: Residential, Park, New Field     Image: Residential, Park, New Field       Image: Residential, Park, New Field     Image: Residential, Park, New Field       Image: Residential, Park, New Field     Image: Residential, Park, New Field       Image: Residential, Park, New Field     Image: Residential, Park, New Field	
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)	
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) 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: Headwaters Middle Conotton Creek Distance from Evaluated Stream niles
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: Jewett NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Rumley
MISCELLANEOUS
Base Flow Conditions? (Y/N):Y Date of last precipitation:06/11/18 Quantity:0.47
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): _ N Canopy (% open): _ 100%
Were samples collected for water chemistry? (Y/N): _N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): _ N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouche
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
NA hh-bao-5/11/20108-04
FLOW Contraction of the state o
October 24, 2002 Revision PHWH Form Page - 2 Save as pdf Reset Form

Stream PB-22	2
<b>ChieEPA</b> Primary Headwater Habitat Evaluation Form <b>39</b>	1
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-0	3
LENGTH OF STREAM REACH (ft)       32       LAT.       40.36090       LONG.       -81.05223       RIVER CODE       RIVER MILE         DATE       06/11/18       SCORER       MDT, BAO       COMMENTS       Intermittent flow regime	=
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER	
MODIFICATIONS: pasture impact	1
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	HEI
BLDR SLABS [16 pts] 0% SILT [3 pt] 20% PO	ints
III BEDROCK 16 pt 0% LI EINE DETRUUS 13 pts 0%	strate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt]	< = 40
✓       GRAVEL (2-64 mm) [9 pts]       40%       □       MUCK [0 pts]       0%         ✓       SAND (<2 mm) [6 pts]	9
Total of Percentages of (A) Substrate Percentage (B)	
Bldr Slabs, Boulder, Cobble, Bedrock TOLOU% (X) TOTAL NUMBER OF SUBSTRATE TYPES: 4	
	Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	c = 30
> 30 centimeters [20 pts]       ✓       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓       > 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTSMAXIMUM POOL DEPTH Inches 4	
	nkfull
= 3.0  m (<=3'3'') [5  pts]	idth x=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS Ohwm AVERAGE BANKFULL WIDTH Feet : 2.00 COMMENTS	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH       FLOODPLAIN QUALITY         L_R       (Per Bank)       L_R       (Most Predominant per Bank)       L_R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Field Urban or Industrial	
None     Fenced Pasture     Mining or Construction       COMMENTS	
<b>FLOW REGIME</b> (At Time of Evaluation) (Check ONLY one box):	
<ul> <li>Stream Flowing</li> <li>Subsurface flow with isolated pools (Interstitial)</li> <li>Moist Channel, isolated pools, no flow (Intermittent)</li> <li>Dry channel, no water (Ephemeral)</li> </ul>	
COMMENTS ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
STREAM GRADIENT ESTIMATE       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: Headwaters Middle Conotton Creek Distance from Evaluated Stream miles
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Archer
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:06/11/18 Quantity:0.47
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): _ (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N):N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vo
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
N hh-bao-5/11/2018-03 o pond
FLOW T-Line ROW Edge
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Stream PB-23	
ChieEPA Primary Headwater Habitat Evaluation Form 17	
HHEI Score (sum of metrics 1, 2, 3) :	_
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-02	Ī
SITE NUMBER PB-23 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	4
LENGTH OF STREAM REACH (ft)       104       LAT.       40.36040       LONG.       -81.05230       RIVER CODE       RIVER MILE         DATE       06/11/18       SCORER       MDT, BAO       COMMENTS       Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	_
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       pasture impact	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	
BLDR SLABS [16 pts] 0% SILT [3 pt] 55% Poin	
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         Image: Fine Detritues [3 pts]         0%         Substration of the second seco	
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 20%	40
GRAVEL (2-64 mm) [9 pts]       15%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	
Total of Percentages of (A) Substrate Percentage (B)	
Bldr Slabs, Boulder, Cobble, Bedrock TOLOU% (X) TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2.       Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)       (Check ONLY one box):       Pool Depth (Max = 1000 ft)	-
<ul> <li>&gt; 30 centimeters [20 pts]</li> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 5 cm - 10 cm [15 pts]</li> <li>&lt; 5 cm [5 pts]</li> </ul>	_
> 10 - 22.5 cm [25 pts]	
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankf	
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width         > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] $\checkmark$ $\le$ 1.0 m (<=3' 3") [5 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	7
COMMENTS ohwm AVERAGE BANKFULL WIDTH Feet 1. 1.50 5	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH       FLOODPLAIN QUALITY         L_R       (Per Bank)       L_R       (Most Predominant per Bank)       L_R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m III miniature Foldst, official of old III Urban or Industrial Field Open Pasture, Row Crop	
None       Fenced Pasture       Mining or Construction         COMMENTS       row	
<b>FLOW REGIME</b> (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 ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
STREAM GRADIENT ESTIMATE         Flat (0.5 ft/100 ft)         Flat to Moderate         Image: Moderate (2 ft/100 ft)         Image: Moderate to Severe         Image: Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>):</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Headwaters Middle Conotton Creek	Distance from Evaluated Stream 1.20 miles
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	HED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett NRCS Soil Ma	p Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Arc	her
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:06/11/18	Quantity: 0.47
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or i	id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mq/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream $(Y/N)$ If not, please explain:	
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the         Fish Observed? (Y/N)         N         Voucher? (Y/N)         N	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	
Include important landmarks and other features of interest for site evaluation	and a narrative description of the stream's location
pasture	
	© wooded
hh-bao-5/11/2018-02	
Slope	T-Line ROW Edge
I	I
BUWH Form Pogo 2	

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Stream PB-24	
<b>ChieEPA</b> Primary Headwater Habitat Evaluation Form 17	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-01	]
	4
LENGTH OF STREAM REACH (ft)       98       LAT.       40.35998       LONG.       -81.05213       RIVER CODE       RIVER MILE         DATE       06/11/18       SCORER       MDT, BAO       COMMENTS       Ephemeral flow regime	f
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS: culvert and pasture impact	
1. SUBSTRATE (Estimate percent of every type of substrate 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	ric
BLDR SLABS [16 pts] 0% SILT [3 pt] 55% POINT	ts
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% Substra	
$\square \square COBBLE (65-256 mm) [12 pts] \qquad \boxed{10\%} \qquad \boxed{\square} \square CLAY or HARDPAN [0 pt] \qquad \boxed{20\%} \qquad \boxed{Max = 4}$	40
GRAVEL (2-64 mm) [9 pts]       15%       MUCK [0 pts]       0%       7         SAND (<2 mm) [6 pts]	
Total of Percentages of 10.00% (A) Substrate Percentage 100% (B) A + B	
Bldr Slabs, Boulder, Cobble, Bedrock Check Check TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth	enth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max =	-
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓	7
> 10 - 22.5 cm [25 pts]	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfu > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width	
= 3.0  m (> 3.0  m (> 9' 7" - 13') [25  pts] $ = 3.0  m (> 9' 7" - 4' 8") [20  pts] $ $ = 1.0  m (<=3' 3") [5  pts] $ $ = 1.0  m (<=3' 3") [5  pts]$	
COMMENTS ohwm AVERAGE BANKFULL WIDTH Feet 1. 1.00 5	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Image: Marrow <5m	
COMMENTS row	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
<ul> <li>Stream Flowing</li> <li>Subsurface flow with isolated pools (Interstitial)</li> <li>Moist Channel, isolated pools, no flow (Intermittent)</li> <li>Dry channel, no water (Ephemeral)</li> </ul>	
COMMENTS ephemeral	
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	o be Completed):		
QHEI PERFORMED? - Yes 🖌 No QHEI Score	(If Yes, Attac	ch Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)			
WWH Name: Headwaters Middle Conotton Creek		_ Distance from Evaluated St	ream <b>1.22</b> miles
		Distance from Evaluated Str	
EWH Name:		Distance from Evaluated Str	eam
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE E	NTIRE WATERSHED	AREA. CLEARLY MARK THE	SITE LOCATION
USGS Quadrangle Name: Jewett	NRCS Soil Map Pa	age: NRCS Soil Map	Stream Order
County: Harrison Town	ship / City:Archer		
MISCELLANEOUS			
Base Flow Conditions? (Y/N): Date of last precipitation: _	06/11/18	Quantity: <b>0.47</b>	
Photograph Information: 3 photos			
Elevated Turbidity? (Y/N): N Canopy (% open): 100	)%		
Were samples collected for water chemistry? (Y/N): _N (Note la	ab sample no. or id. a	nd attach results) Lab Numbe	r:
Field Measures: Temp (°C) Dissolved Oxygen (mq/l)	pH (S.U.)	Conductivity (µmhos/c	:m)
Is the sampling reach representative of the stream (Y/N) If not	t, please explain:		
Additional comments/description of pollution impacts:			
BIOTIC EVALUATION			
Performed? (Y/N): N (If Yes, Record all observations. Voucher ID number. Include appropriate field dat Fish Observed? (Y/N) Voucher? (Y/N) Salamanders O Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua Comments Regarding Biology:	ta sheets from the Prin Observed? (Y/N)	nary Headwater Habitat Assess Voucher? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM R	EACH (This <u>must</u> be co	ompleted):
Include important landmarks and other features of interest for	or site evaluation and	d a narrative description of th	e stre m's location
slope			
		wooded	
		Wooded	
hh-bao-5/11/20	018-01		
FLOW 🔫			
pasture			
	slope		
T-Line ROW Edge			
			T-Line ROV Edge
1			I
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Stream PB-25	
ChieFPA Primary Headwater Habitat Evaluation Form 25	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-07	]
SITE NUMBER PB-25 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	4
LENGTH OF STREAM REACH (ft) 199 LAT. 40.35764 LONG81.05208 RIVER CODE RIVER MILE DATE 06/11/18 SCORER MDT, BAO COMMENTS Ephemeral flow regime	4
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS:	
1. SUBSTRATE (Estimate percent of every type of substrate 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	ric
BLDR SLABS [16 pts] 0% SILT [3 pt] 70% POIN	its
BEDROCK [16 pt] 0% Substr	
$\square \square COBBLE (65-256 mm) [12 pts] \qquad \boxed{0\%} \qquad \boxed{\square} \square CLAY or HARDPAN [0 pt] \qquad \boxed{0\%} \qquad \boxed{\square} \square CLAY or HARDPAN [0 pt] \qquad \boxed{0\%} \qquad \boxed{\square} \square \square DMUCK [0 pts] \qquad \boxed{0\%} \qquad \boxed{\square} \square \square DMUCK [0 pts] \qquad \boxed{0\%} \qquad \boxed{\square} \square \square DMUCK [0 pts] \qquad \boxed{0\%} \qquad \boxed{\square} \square \square DMUCK [0 pts] \qquad \boxed{0\%} \qquad \boxed{\square} \square DMUCK [0 pts] \qquad \boxed{\square} \square \square DMUCK [0 pts] \qquad \boxed{\square} \square DMUCK [$	: 40
GRAVEL (2-64 mm) [9 pts]       20%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A + B	<b></b> ]
Bldr Slabs, Boulder, Cobble, Bedrock	-
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft</i> ) evaluation reach at the time of Pool Depth	epth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max =	-
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	
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] Widt	
= 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts] $ = 3.0  m - 4.0  m (> 9' 7" - 13') [25  pts] $ $ = 1.0  m (<=3' 3") [5  pts] $ $ = 1.0  m (<=3' 3") [5  pts] $ $ = 1.0  m (<=3' 3") [5  pts]$	
COMMENTS Ohwm AVERAGE BANKFULL WIDTH Feet 1.00 5	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY       ANOTE: River Left (L) and Right (R) as looking downstream         RIPARIAN WIDTH       FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None 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)	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (C</u> heck ONLY one box):	
None 1.0 2.0 3.0	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)	

QHEI PERFORMED? - Yes Ves No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Clear Fork	Distance from Evaluated Stream >2 miles Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIF	RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett N	RCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township	o / City: Archer
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:0	6/11/18 Quantity: 0.47
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sa	ample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, ple	ease explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sh       Fish Observed? (Y/N)       N       Voucher? (Y/N)       Salamanders Observed?	Vacroinvertebrates Observed? (Y/N)
Include important landmarks and other features of interest for si	te evaluation and a narrative description of the stream's location
N A	ag hillslope wooded
FLOW	wetland
T-Line ROW Edge	slope T-Line ROW Edge
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ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

Stream PB-26	]
ChieFPA Primary Headwater Habitat Evaluation Form 26	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-06/11/2018-00	6
SITE NUMBER PB-26 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 112 LAT. 40.35629 LONG81.05225 RIVER CODE RIVER MILE DATE 06/11/18 SCORER MDT, BAO COMMENTS Ephemeral flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS:	
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	IEI tric
BLDR SLABS [16 pts] 0% SILT [3 pt] 45% POI	nts
BEDROCK [16 pt] 5% FINE DETRITUS [3 pts] 0%	strate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	= 40
GRAVEL (2-64 mm) [9 pts]       40%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	6
Total of Percentages of 5 00% (A) Substrate Percentage 100% (B)	B
Bldr Slabs, Boulder, Cobble, Bedrock 0.0078 TOTAL NUMBER OF SUBSTRATE TYPES: 4	_
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool	Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	= 30
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	'
3.         BANK FULL WIDTH (Measured as the average of 3-4 measurements)         (Check ONLY one box):         Ban           > 4.0 meters (> 13') [30 pts]         > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]         Wid	kfull dth
= 3.0  m - 4.0  m (> 9' 7'' - 13') [25  pts] $ = 3.0  m - 4.0  m (> 9' 7'' - 13') [25  pts] $ $ = 1.0  m (<=3' 3'') [5  pts] $ $ = 1.0  m (<=3' 3'') [5  pts]$	
COMMENTS Ohwm AVERAGE BANKFULL WIDTH Feet 1.00 5	
RIPARIAN ZONE AND FLOODPLAIN QUALITY       \$\frac{1}{2}\$ NOTE: River Left (L) and Right (R) as looking downstream         RIPARIAN WIDTH       FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None         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)	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (Check ONLY one box):</u>	
None $1.0$ $2.0$ $3.0$ 0.5 $7$ $1.5$ $2.5$ $>3$	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe (10 ft/100 ft)	

QHEI PERFORMED? - Yes V No QHEI Score (If	Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Clear Fork	Distance from Evaluated Stream >2 miles
	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WAT	TERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett NRCS Second	oil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City:	Archer
MISCELLANEOUS Base Flow Conditions? (Y/N):_Y Date of last precipitation:06/11/1	18 Quantity: 0.47
	<b>18</b> Quantity: <b>U.47</b>
Photograph Information: _3 photos	
Elevated Turbidity? (Y/N): _ Canopy (% open): _ 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample n	no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH	(S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream $(Y/N)$ If not, please ex	plain:
	· · · · · · · · · · · · · · · · · · ·
Additional comments/description of pollution impacts:	
	s optional. NOTE: all voucher samples must be labeled with the site om the Primary Headwater Habitat Assessment Manual) (Y/N) N Voucher? (Y/N) N overtebrates Observed? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF STR Include important landmarks and other features of interest for site evalues of interest for site evalues of the state of	· <u> </u>
NŢ	wetland
FLOW	loge T-Line ROV Edge
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ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

Stream PB	-27
ChieEPA Primary Headwater Habitat Evaluation Form	2
HHEI Score (sum of metrics 1, 2, 3) :	2
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/20	18-01
SITE NUMBER PB-27 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.0	)1
LENGTH OF STREAM REACH (ft) 120 LAT. 40.35130 LONG81.05285 RIVER CODE RIVER MILE	
DATE 06/12/18 SCORER MDT, BAO COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO MODIFICATIONS: Infommelized to flow between as fields	VERY
SUBSTRATE (Estimate percent of every type of substrate 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.	HHEI
TYPE         PERCENT         TYPE         PERCENT           BLDR SLABS [16 pts]         0%         ✓         SILT [3 pt]         15%	Metric Points
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substrate
BEDROCK         [16 pt]         0%         FINE DETRITUS         [3 pts]         0%           COBBLE         (65-256 mm)         [12 pts]         5%         CLAY or HARDPAN         [0 pt]         75%	Max = 40
GRAVEL (2-64 mm) [9 pts]     5%     MUCK [0 pts]     0%	7
SAND (<2 mm) [6 pts]         0%         ARTIFICIAL [3 pts]         0%	7
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
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]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]         NO WATER OR MOIST CHANNEL [0 pts]	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]	Bankfull Width
$ = 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7'' - 13') [25 \text{ pts}] $ $ \leq 1.0 \text{ m} (<=3' 3'') [5 \text{ pts}] $	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	_
COMMENTS AVERAGE BANKFULL WIDTH Feet : 2.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L_R     (Per Bank)     L_R     (Most Predominant per Bank)     L_R	
Wide >10m     Mature Forest, Wetland     Conservation Tillage       Immature Forest, Shrub or Old     Immature Forest, Shrub or Old     Immature Forest, Shrub or Old	
Field Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction	
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)	
SINUOSITY (Number of ben <u>ds</u> 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 So	core (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Clear Fork	Distance from Evaluated Stream 1.70 m
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
	NG THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison	Township / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipita	ation: 06/11/18 Quantity: 0.47
Photograph Information: 2 photos	
Elevated Turbidity? (Y/N): _ N Canopy (% open):	. <b>100%</b>
Were samples collected for water chemistry? (Y/N):	_ (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (r	ma/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	If not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriat       Fish Observed? (Y/N)	ns. Voucher collections optional. NOTE: all voucher samples must be labeled with the sinte field data sheets from the Primary Headwater Habitat Assessment Manual) manders Observed? (Y/N) N Voucher? (Y/N) N Vou
DRAWING AND NARRATIVE DESCR	RIPTION OF STREAM REACH (This <u>must</u> be completed):
	interest for site evaluation and a narrative description of the stream's location
slope	soybean field
	s-mdt-6/12/20108-01
	S-11101-0/12/20106-01
FLOW	
	T-Line RDW Edge
	7
Slope	
	soybean field
I	
	PHWH Form Page - 2
October 24, 2002 Revision	Save as pdf Reset Form

	Stream PB-28
<b>ChieEPA</b> Primary Headwater H	Habitat Evaluation Form 61
	HHEI Score (sum of metrics 1, 2, 3) :
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV	
	BASIN 05040001 DRAINAGE AREA (mi <sup>2</sup> ) 0.34
LENGTH OF STREAM REACH (ft) 337 LAT. 40.34373 L DATE 06/12/18 SCORER MDT, BAO COMMENTS	ONG81.05501 RIVER CODE RIVER MILE
	valuation Manual for Ohio's PHWH Streams" for Instructions
·	
STREAM CHANNEL     NONE / NATURAL CHANNEL       MODIFICATIONS:     Transmission line ROW	
1. SUBSTRATE (Estimate percent of every type of substrate p	resent. Check ONLY two predominant substrate TYPE boxes
(Max of 32). Add total number of significant substrate types fou	nd (Max of 8). Final metric score is sum of boxes A & B.
TYPE     PERCENT     TYPE       BLDR SLABS [16 pts]     0%     1	SILT [3 pt] Points
BOULDER (>256 mm) [16 pts] <u>0%</u> BEDROCK [16 pt] <b>0%</b>	LEAF PACK/WOODY DEBRIS [3 pts]     0%       FINE DETRITUS [3 pts]     0%
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]
✓       GRAVEL (2-64 mm) [9 pts]       65%         ✓       ✓       SAND (<2 mm) [6 pts]	MUCK [0 pts] 0% 16
Bldr Slabs, Boulder, Cobble, Bedrock	Check 100%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12	
2. Maximum Pool Depth (Measure the maximum pool depth we evaluation. Avoid plunge pools from road culverts or storm wate	
> 30 centimeters [20 pts] 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts] 30
COMMENTS	MAXIMUM POOL DEPTH Inches 10
3 BANK FULL WIDTH (Measured as the average of 3-4 measured as the start and the s	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	✓       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width         ≤ 1.0 m (<=3' 3") [5 pts]
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH Feet : 4.00 15
This informa	
RIPARIAN ZONE AND FLOODPLAIN QUALITY 🛛 🖄	t <b>ion <u>must</u> also be completed</b> rNOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH         FLOODPLAIN QUA           _L_R         (Per Bank)         L_R         (Most Pre	<u>∖LTY</u> edominant per Bank) <u>L_R</u>
	orest, Wetland Conservation Tillage
Moderate 5-10m	
	al, Park, New Field Open Pasture, Row Crop
COMMENTS row	Pasture Mining or Construction
FLOW REGIME (At Time of Evaluation) (Check ONLY	∕one <u>box</u> ):
Stream Flowing Subsurface flow with isolated pools (Interstitial)	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS_intermittent	
SINUOSITY (Number of bends per 61 m (200 ft) of char	
None         1.0           0.5         ✓         1.5	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100	0 ft) Moderate to Severe (10 ft/100 ft)

	ATED USE(S)		Г	4.00
WWH Name: Clear Fork	······································		tance from Evaluated Stream	1.02
CWH Name:			ance from Evaluated Stream _	
	ES OF MAPS, INCLUDING THE <u>E</u>	1 г		Г
USGS Quadrangle Name: Jewett		NRCS Soil Map Page:	NRCS Soil Map Strear	n Order _
County: Harrison	Town	ship / City: <b>Archer</b>		
MISCELLANEOUS	1			
Base Flow Conditions? (Y/N):_Y	_ Date of last precipitation:	06/11/18	Quantity: <b>0.47</b>	
Photograph Information: 3 photos				
Elevated Turbidity? (Y/N): _	Canopy (% open): <b>100</b>	1%		
Were samples collected for water ch	emistry? (Y/N): N (Note la	b sample no or id and at	tach results) Lab Number:	
		pH (S.U.)	Conductivity (µmhos/cm)	
Field Measures: Temp (°C)	Dissolved Oxygen (mg/l)	PH (S.U.)		
Is the sampling reach representative	of the stream (Y/N)	t, please explain:		
Additional comments/description of	oollution impacts:			
BIOTIC EVALUATION				
N				
	es, Record all observations. Vouche Imber. Include appropriate field dat		-	
				anuar)
Fish Observed? (Y/N) Vouc	cher? (Y/N) N Salamanders C		oucher? (Y/N)	N
Frogs or Tadpoles Observed? (Y/N)	N Voucher? (Y/N) N Aqua	atic Macroinvertebrates Ob	vserved? (Y/N) N Voucher?	(Y/N)
Comments Regarding Biology:				
Comments Regarding Biology:				
Comments Regarding Biology:				
Comments Regarding Biology:				
	ARRATIVE DESCRIPTION	OF STREAM READ	H (This must be comple	eted):
DRAWING AND N	ARRATIVE DESCRIPTION		· <u> </u>	
DRAWING AND N	ARRATIVE DESCRIPTION and other features of interest fo		· <u> </u>	
DRAWING AND N. Include important landmarks			· <u> </u>	
DRAWING AND N			· <u> </u>	
DRAWING AND N. Include important landmarks			· <u> </u>	
DRAWING AND N. Include important landmarks			· <u> </u>	
DRAWING AND N. Include important landmarks			· <u> </u>	
DRAWING AND N. Include important landmarks			· <u> </u>	

T-Line ROW Edge

PHWH Form Page - 2

Reset Form

Stream PE	3-29
ChieEPA Primary Headwater Habitat Evaluation Form	25
HHEI Score (sum of metrics 1, 2, 3) :	23
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/20	018-04
SITE NUMBER PB-29 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0	.01
LENGTH OF STREAM REACH (ft) 17 LAT. 40.34355 LONG81.05500 RIVER CODE RIVER MILE	
DATE 06/12/18 SCORER MDT, BAO COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru-	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERING         MODIFICATIONS:       Isome impact from finalis       Isome impact from finalis       Isome impact from finalis	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate 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.	HHEI
TYPE         PERCENT         TYPE         PERCENT           BLDR SLABS [16 pts]         0%         I         SILT [3 pt]         30%	Metric Points
BOULDER (>256 mm) [16 pts]	Substrate
BEDROCK [16 pt]         0%         FINE DETRITUS [3 pts]         0%           COBBLE (65-256 mm) [12 pts]         0%         CLAY or HARDPAN [0 pt]         0%	Max = 40
GRAVEL (2-64 mm) [9 pts]     60%     MUCK [0 pts]     0%       SAND (c2 mm) [6 pts]     10%     ARTIFICIAL [3 pts]     0%	15
Bldr Slabs, Boulder, Cobble, Bedrock	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
<ol> <li>Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</li> </ol>	Pool Depth Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 22.5 - 30 cm [30 pts]	
> 10 - 22.5 cm [25 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
= > 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] = 4  m (< 3' 3" - 4' 8") [15  pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 0.50	5
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY 가NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R     (Per Bank)     L R     (Most Predominant per Bank)     L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Field Grate 5-10m Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	ур
None         Fenced Pasture         Mining or Construction           COMMENTS         row	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial)	1
COMMENTS ephemeral	-
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 (2 ft/100 ft) Moderate to Severe (10 ft/10	DO ft)

QHEI PERFORMED? - Yes 🖌 No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Clear Fork	Distance from Evaluated Stream1.05
CWH Name:	
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	HE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison	ownship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	06/11/18 Quantity: 0.47
Photograph Information: 3 photos	
	100%
	te lab sample no. or id. and attach results) Lab Number:
Field Measures:       Temp (°C)       Dissolved Oxygen (mg/l)	
Is the sampling reach representative of the stream (Y/N)	f not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field	d data sheets from the Primary Headwater Habitat Assessment Manual)
ID number.     Include appropriate field       Fish Observed? (Y/N)     N     Voucher? (Y/N)     N     Salamande       Frogs or Tadpoles Observed? (Y/N)     N     Voucher? (Y/N)     N     Voucher? (Y/N)	bucher collections optional. NOTE: all voucher samples must be labeled with d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
ID number. Include appropriate field       Fish Observed? (Y/N)       N       Voucher? (Y/N)       N	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N
ID number.     Include appropriate field       Fish Observed? (Y/N)     N     Voucher? (Y/N)     N     Salamande       Frogs or Tadpoles Observed? (Y/N)     N     Voucher? (Y/N)     N     Voucher? (Y/N)	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N
ID number.     Include appropriate field       Fish Observed? (Y/N)     N     Voucher? (Y/N)     N     Salamande       Frogs or Tadpoles Observed? (Y/N)     N     Voucher? (Y/N)     N     Voucher? (Y/N)	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology:	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope S:-mdt-6/12/20108-04	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope S:-mdt-6/12/20108-04	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope S:-mdt-6/12/20108-04	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope S:-mdt-6/12/20108-04	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope S:-mdt-6/12/20108-04	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N ION OF STREAM REACH (This <u>must</u> be completed): est for site evaluation and a narrative description of the stream's locati
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope FLOW	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N ION OF STREAM REACH (This <u>must</u> be completed): est for site evaluation and a narrative description of the stream's locati
ID number. Include appropriate field Fish Observed? (Y/N) N Salamande Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPT Include important landmarks and other features of intere slope FLOW	d data sheets from the Primary Headwater Habitat Assessment Manual) ers Observed? (Y/N) N Voucher? (Y/N) N V

Stream PB-30	<i>i</i>
<b>ChieEPA</b> Primary Headwater Habitat Evaluation Form 34	1
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/2018-0	)3
SITE NUMBER PB-30 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 17 LAT. 40.34338 LONG81.05507 RIVER CODE RIVER MILE	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
·	
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVER         MODIFICATIONS:       Transmission Line ROW       Transmission Line ROW       Transmission Line ROW	Y
1. SUBSTRATE (Estimate percent of every type of substrate 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.	HEI etric
BLDR SLABS [16 pts] 0% SILT [3 pt] 0% PO	ints
BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%           BEDROCK [16 pt]         0%         Image: Construction of the second	strate
COBBLE (65-256 mm) [12 pts] 25% CLAY or HARDPAN [0 pt] 0%	x = 40
GRAVEL (2-64 mm) [9 pts]       65%       Image: MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	4
Bldr Slabs, Boulder, Cobble, Bedrock	+ B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
	I Depth x = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	
	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bar	nkfull
	idth x=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 3.00	5
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         \$NOTE: River Left (L) and Right (R) as looking downstream	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R (Per Bank)     L R (Most Predominant per Bank)     L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS intermittent	
SINUOSITY (Number of ben <u>ds per 61 m (200 ft) of channel) (Check ONLY one box):</u>	
None         1.0         2.0         3.0           0.5         7         1.5         2.5         >3	
STREAM GRAD <u>IENT ESTIMATE</u>	
Image: Flat (0.5 ft/100 ft)       Image: Flat to Moderate       Image: Moderate (2 ft/100 ft)       Image: Moderate to Severe       Image: Severe (10 ft/100 ft)	

QHEI PERFORMED? - Yes 🖌 No QHE	El Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Clear Fork	Distance from Evaluated Stream1.03
EWH Name:	Distance from Evaluated Stream
	UDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jewett	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison	Township / City:Archer
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last pred	cipitation: 06/11/18 Quantity: 0.47
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): _N Canopy (% op	ben): <b>100%</b>
Were samples collected for water chemistry? (Y/N):	
	en (mg/l) pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N)	If not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appro	ations. Voucher collections optional. NOTE: all voucher samples must be labeled with priate field data sheets from the Primary Headwater Habitat Assessment Manual)
Performed? (Y/N): N (If Yes, Record all observa ID number. Include appro	priate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N) N
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Stream PB-31	]
ChieFPA Primary Headwater Habitat Evaluation Form 29	1
HHEI Score (sum of metrics 1, 2, 3) :	<u> </u>
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/2018-0	)5
SITE NUMBER PB-31 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	
LENGTH OF STREAM REACH (ft) 123 LAT. 40.34227 LONG81.05572 RIVER CODE RIVER MILE	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER	
MODIFICATIONS: some impact from cuver/channelization	T
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	HEI
BLDR SLABS [16 pts] 0% SILT [3 pt] 10% Po	ints
BEDROCK 116 pti V% LILE FINE DETRITUS 13 ptsi V/	strate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	( = 40
GRAVEL (2-64 mm) [9 pts]       60%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	9
Total of Percentages of (A) Substrate Percentage (B)	
Bldr Slabs, Boulder, Cobble, Bedrock TOLOU% (X) TOTAL NUMBER OF SUBSTRATE TYPES: 4	·D
	Denti
	Depth c = 30
> 30 centimeters [20 pts]       > 5 cm - 10 cm [15 pts]         > 22.5 - 30 cm [30 pts]       ✓	
> 10 - 22.5 cm [25 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	nkfull
$\square > 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7'' - 13') [25 \text{ pts}] \qquad \qquad \checkmark \le 1.0 \text{ m} (<=3' 3'') [5 \text{ pts}] \qquad \qquad \textbf{Max}$	idth x=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 2.00   5	<b>;</b>
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L_R     (Per Bank)     L_R     (Most Predominant per Bank)     L_R	
Wide >10m     Mature Forest, Wetland     Conservation Tillage       Madagate 5, 10m     Immature Forest, Shrub or Old     Immature Horest, Shrub or Old	
Moderate 5-10m	
None     Fenced Pasture     Mining or Construction       COMMENTS     row	
<b>FLOW REGIME</b> (At Time of Evaluation) (Check ONLY one box):	
<ul> <li>Stream Flowing</li> <li>Subsurface flow with isolated pools (Interstitial)</li> <li>Moist Channel, isolated pools, no flow (Intermittent)</li> <li>Dry channel, no water (Ephemeral)</li> </ul>	
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	

DOWNSTREAM DESIGNATED USE(S) Distance from Evaluated Stream O.96 WWH Name: Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE STE LOCATION USGS Quadrangle Name, Jewett NRCS Soil Map Dage, NRCS Soil Map Stream Order County, Harrison MISCELLANEOUS Base Flow Conditions? (VN), Date of last precipitation: MISCELLANEOUS Base Flow Conditions? (VN), Cacopy (% open): 100% Were samples collected for water chemistry? (VN); N (Note lab sample no. or id, and attach results) Lab Number. Field Measures: Temp (*O) Dissolved Oxygen (mg/l) PH (S.U.) Conductivity (umhos/cm) Is the sampling reach representative of the stream (Y/N) If Incl, please explain:  Biotic EVALUATION Performed? (V/N); N (If Yes, Record all observations, Vaucher collections optional: NOTE: all voucher samples must be labeled with II Dommert: Include appropriate Indid data sheets from the Timary Headwater Habitan Assessment Manual) Fieh Observed? (VN), N Voucher? (VN), N Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream (VN) FLOW		HEI Score (If Yes, Attach Completed QHEI Form)	
Bitting of the stream       Distance from Evaluated Stream         USGS Quadrangle Name       Jewett         NRCS Soil Map Page       NRCS Soil Map Stream Order         County:       Jarrison       Township / City.         MiscelLaneOUS       Base Flow Conditions? (VN):       V         Detains of the stream       Odd/11/18       Quantity:       0.47         Photograph Information:       3 photos       Elevated Turbidity? (VN):       N       Concept (% open):       100%         Were samples collected for water chemistry? (VN):       N       (Note lab sample no. orid. and attach results) Lab Number.       Field Messures:       Temp (*C)       Disolved Oxygen (mg/l)       PH (S.U.)       Conductivity (µmhos/cm)       States anapting reach representative of the stream (V/N)       If not, please explain:         Additional comments/description of pollution impacts:		Distance from Evoluted 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:       Jewett         NRCS Soil Map Page       NRCS Soil Map Stream Ordor         County:       Harrison         Township / City:       Archer         MISCELLANEOUS       Base Flow Conditions? (V/N):         Base Flow Conditions? (V/N):       Quantity:         O.47       Photograph Information:         3 photos       Elevated Turbidity? (V/N):         Elevated Turbidity? (V/N):       N         Canopy (% open):       100%         Were samples collected for water chemistry? (V/N):       N         (Note lab sample no. or id. and attach results) Lab Number.         Field Measures:       Temp (*C)         Dissolved Oxygen (map)       pH (S.U.)         Conductivity (umhos/cm)       Is the sampling reach representative of the stream (Y/N)         Is the sampling reach representative of pollution impacts:			
USGS Quadrangle Name: Jewett NRCS Soil Map Page: NRCS Soil Map Stream Order County: Harrison Township / City: Archer MISCELLANEOUS Base Flow Conditions? (Y/N): V Date of last precipitation: 06/11/18 Quantity: 0.47 Photograph Informatio: 3 photos Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number. Field Measures: Temp (*C) Dissolved Oxygen (mg/N) pH (S.U.) Conductivity (umhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: BioTC EVALUATION Performed? (Y/N): N (Voucher? (Y/N) Salemanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Fix Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for atte evaluation and a narrative description of the stream's locatio FLOW A Imperiation of the stream of the frame stream of the stream's locatio FLOW A Imperiation of the stream of the frame stream of the stream's locatio FLOW A Imperiation of the stream of the stream of the stream's locatio FLOW A Imperiation of the stream's location FLOW A Imperimentation of the stream's location FLOW A Imperiation of the str			
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MISCELLANEOUS         Base Flow Conditions? (Y/N): Y       Date of last precipitation: 06/11/18       Quantity: 0.47         Photograph Information: 3 photos         Elevated Turbidity? (V/N): N       Canopy (% open): 100%         Were samples collected for water chemistry? (Y/N): N       (Note lab sample no. or id. and attach results) Lab Number:	USGS Quadrangle Name: <b>Jewett</b>	NRCS Soil Map Page: NRCS Soil Map Stream Order	
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Field Measures: Temp (°C)   Dissolved Oxygen (mq/l) pH (S.U.)   Conductivity (µmhos/cm)   Is the sampling reach representative of the stream (Y/N)   Y If not, please explain:   Additional comments/description of pollution impacts:    BIOTIC EVALUATION Performed? (Y/N):    Performed? (Y/N):      ID number: Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)   Fish Observed? (Y/N)     Voucher? (Y/N)			
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Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location somethics in the stream's location is	Performed? (Y/N): N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (*	ropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N) N	n th
FLOW s-mdt-6/12/2018-05 T-Line RDW	Performed? (Y/N): N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (*	ropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Salamanders Observed? (Y/N) N Voucher? (Y/N) N	n the
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FLOW T-Line RDW	Performed? (Y/N): _N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? ( Comments Regarding Biology: DRAWING AND NARRATIVE DE	Salamanders Observed? (Y/N) N Voucher? (	
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	Performed? (Y/N): N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) Voucher? (Y/N) Voucher? ( Comments Regarding Biology: Voucher? ( DRAWING AND NARRATIVE DE Include important landmarks and other feature	Bis Section 1       Section 1 </td <td>tion</td>	tion
	Performed? (Y/N): _N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (' Comments Regarding Biology:	Bis Section 1       Section 1 </td <td>tion</td>	tion
	Performed? (Y/N): _N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (' Comments Regarding Biology:	Bis Section 1       Section 1 </td <td>tion</td>	tion
V T-Line ROW Edge	Performed? (Y/N): _N (If Yes, Record all obser ID number. Include app Fish Observed? (Y/N) N Voucher? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Voucher? ( Comments Regarding Biology:	Bis Section 1       Section 1 </td <td>tion</td>	tion

October 24, 2002 Revision

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PHWH Form Page - 2

Save as pdf

**Reset Form** 

Stream PB-32	
ChieFPA Primary Headwater Habitat Evaluation Form 40	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/2018-06	5
SITE NUMBER <b>PB-32</b> RIVER BASIN <b>05040001</b> DRAINAGE AREA (mi²) <b>0.02</b>	4
LENGTH OF STREAM REACH (ft) 388 LAT. 40.33673 LONG81.05806 RIVER CODE RIVER MILE	-
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	 S
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS:	
1. SUBSTRATE (Estimate percent of every type of substrate 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	ric
BLDR SLABS [16 pts]         0%         SILT [3 pt]         15%           BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%	nts
BEDROCK [16 pt] 5% G FINE DETRITUS [3 pts] 0% Subst	
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	
Image: Sand (<2 mm) [6 pts]	/
Total of Percentages of 20.00% (A) Substrate Percentage 100% (B) A + E	B
Bildr Slabs, Boulder, Cobble, Bedrock 10076 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool D	Pepth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	= 30
<ul> <li>22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>S NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width	th
$ = 3.0 \text{ m} - 4.0 \text{ m} (> 9' 7" - 13') [25 \text{ pts}] \\ > 1.5 \text{ m} - 3.0 \text{ m} (> 9' 7" - 4' 8") [20 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3' 3" 3") [5 \text{ pts}] \\ = 1.0 \text{ m} (<=3'$	:30
COMMENTS AVERAGE BANKFULL WIDTH Feet : 2.50 5	
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY · · ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R (Per Bank)     L R (Most Predominant per Bank)     L R	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None     Fenced Pasture     Mining or Construction     COMMENTS     row	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
<ul> <li>Stream Flowing</li> <li>Subsurface flow with isolated pools (Interstitial)</li> <li>Moist Channel, isolated pools, no flow (Intermittent)</li> <li>Dry channel, no water (Ephemeral)</li> </ul>	
COMMENTS_intermittent	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
$\boxed{ 0.5 } 1.5  \boxed{ 2.5 } 3$	
STREAM GRADIENT ESTIMATE         Flat (0.5 ft/100 ft)         Flat to Moderate         Moderate (2 ft/100 ft)         Moderate to Severe	

	EAM DESIGNATED USE(S)	0.57
✓ WWH Name: Clea CWH Name:	ar Fork Distance from Evaluated Stream Distance from Evaluated Stream	0.07
EWH Name:	Distance from Evaluated Stream	
MAPPING: /	ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE L	OCATION
USGS Quadrangle Na	me: Jewett NRCS Soil Map Page: NRCS Soil Map Stream	n Order
County: Harrison	Township / City: Archer	
MISCELLAN		
Base Flow Conditions?	P (Y/N):_Y Date of last precipitation:_06/11/18 Quantity:_0.47	
Photograph Information	n: 3 photos	
	N	
Elevated Turbidity? (Y		
Were samples collecte	ed for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:	
	emp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	
	v v v v v v v v v v v v v v v v v v v	
Is the sampling reach	representative of the stream (Y/N) If not, please explain:	
	lease in the set in all other has a star	
Additional comments/c	description of pollution impacts:	
Additional comments/c	description of pollution impacts:	
BIOTIC EV	ALUATION	
	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la	
BIOTIC EV/ Performed? (Y/N): _N	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma	
BIOTIC EV Performed? (Y/N): _N Fish Observed? (Y/N).	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N	anual)
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)	anual)
BIOTIC EV Performed? (Y/N): _N Fish Observed? (Y/N).	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (	anual)
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (	anual)
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (	anual)
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (	anual)
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BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs Comments Regarding	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? ( Biology:	anual) (Y/N) N eted):
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs Comments Regarding	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? ( Biology:	anual) (Y/N) N eted):
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs Comments Regarding	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? ( Biology:	anual) (Y/N) N eted):
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs Comments Regarding	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? ( Biology:	anual) (Y/N) N eted):
BIOTIC EV. Performed? (Y/N): _N Fish Observed? (Y/N) Frogs or Tadpoles Obs Comments Regarding	ALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be la ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Ma N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Served? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? ( Biology: MG AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be comple nt landmarks and other features of interest for site evaluation and a narrative description of the stream	anual) (Y/N) N eted):

T-Line ROW Edge

slope

Save as pdf

Reset Form

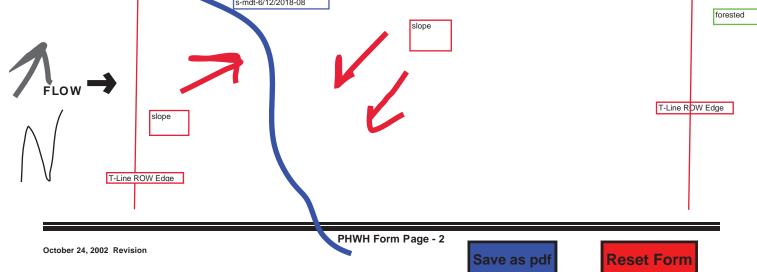
7-

Stream PB-33	
ChieFPA Primary Headwater Habitat Evaluation Form 25	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/2018-07	
SITE NUMBER PB-33 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.01	1
LENGTH OF STREAM REACH (ft) 310 LAT. 40.33034 LONG81.06075 RIVER CODE RIVER MILE	_
DATE 06/12/18 SCORER MDT, BAO COMMENTS ephemeral flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	\$
<b>STREAM CHANNEL</b> NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:	
signs channel has been relocated in spots and channelized	
1. SUBSTRATE (Estimate percent of every type of substrate 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.	EI
TYPE PERCENT TYPE PERCENT Meti	ric
BLDR SLABS [16 pts]         0%         SILT [3 pt]         55%         FOII           BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%<	115
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% Substit	
□       COBBLE (65-256 mm) [12 pts]       0%       □       CLAY or HARDPAN [0 pt]       0%         □       ✓       GRAVEL (2-64 mm) [9 pts]       35%       □       MUCK [0 pts]       0%	
Image: Sand (<2 mm) [6 pts]	)
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) A + E	
Bldr Slabs, Boulder, Cobble, Bedrock	-
	)onth
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]       ✓	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5	
COMMENTS MAXIMUM POOL DEPTH	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 1.50 5	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Vide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None 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)	
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	

	/ No QHEI Score (If Yes, Attach Completed QH	El Form)	
DOWNSTREAM DESIGNATED			
		valuated Stream 0.18	mile
CWH Name:		valuated Stream	_
	MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY		
USGS Quadrangle Name: Jewett		CS Soil Map Stream Order	
County: _ Harrison	Township / City: <b>Archer</b>		
MISCELLANEOUS			
Base Flow Conditions? (Y/N):Y Da	e of last precipitation: 06/11/18 Quantity:	0.47	_
Photograph Information: 2 photos			
Elevated Turbidity? (Y/N): C	anopy (% open): <b>100%</b>		
Were samples collected for water chemistry	? (Y/N): _N (Note lab sample no. or id. and attach results)	Lab Number:	
		ity (µmhos/cm)	
Is the sampling reach representative of the	tream (Y/N) If not, please explain:		
Additional comments/description of pollution	impacts:		
	impacia		
	rd all observations. Voucher collections optional. NOTE: all vouche		he site
Performed? (Y/N): N (If Yes, Reco ID number. Fish Observed? (Y/N) Voucher? (	nclude appropriate field data sheets from the Primary Headwater Ha	bitat Assessment Manual)	the site
Performed? (Y/N): N (If Yes, Reco ID number. Fish Observed? (Y/N) Voucher? ( Frogs or Tadpoles Observed? (Y/N) N Comments Regarding Biology: DRAWING AND NARRA	nclude appropriate field data sheets from the Primary Headwater Ha /N) N Salamanders Observed? (Y/N) N Voucher? (Y/N	bitat Assessment Manual)	on fore
Performed? (Y/N): N (If Yes, Reco ID number. Fish Observed? (Y/N) Voucher? ( Frogs or Tadpoles Observed? (Y/N) N Comments Regarding Biology: DRAWING AND NARRA	nclude appropriate field data sheets from the Primary Headwater Ha /N) N Salamanders Observed? (Y/N) N Voucher? (Y/N oucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N TIVE DESCRIPTION OF STREAM REACH (This <u>m</u> her features of interest for site evaluation and a narrative desc	bitat Assessment Manual) N N N N N N N Voucher? (Y/N) N N N N N N N N N N N N N	on fore

Stream PB-34	
ChieFPA Primary Headwater Habitat Evaluation Form 36	
HHEI Score (sum of metrics 1, 2, 3) :	
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-06/12/2018-08	]
SITE NUMBER PB-34 RIVER BASIN 05040001 DRAINAGE AREA (mi²) 0.11	1
LENGTH OF STREAM REACH (ft) 588 LAT. 40.32927 LONG81.06137 RIVER CODE RIVER MILE	4
DATE 06/12/18 SCORER MDT, BAO COMMENTS intermittent flow regime	_
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	,
STREAM CHANNEL       NONE / NATURAL CHANNEL       RECOVERED       RECOVERING       RECENT OR NO RECOVERY         MODIFICATIONS:       Signs channel has been relocated in soots and channelized       Signs channel has been relocated in soots and channelized	
	_
(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     Metr       BLDR SLABS [16 pts]     0%     I     SILT [3 pt]     20%	
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	rate
Description         D%         Description         D%         Description         D%         Description         D%         D% <thd%< th=""> <thd%< th=""></thd%<></thd%<>	
GRAVEL (2-64 mm) [9 pts] 65% MUCK [0 pts] 0%	
SAND (<2 mm) [6 pts]	
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B) A + B	\$
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth ( <i>Measure the maximum pool depth within the 61 meter (200 ft</i> ) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box): Max =	
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
<ul> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul> 15	
COMMENTS MAXIMUM POOL DEPTH Inches 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankf	full
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]       Width         > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] $\checkmark$ $\le$ 1.0 m (<=3' 3") [5 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH Feet : 3.00 5	
This information must also be completed           RIPARIAN ZONE AND FLOODPLAIN QUALITY         ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH     FLOODPLAIN QUALITY       L R (Per Bank)     L R (Most Predominant per Bank)     L R	
Wide >10m   Mature Forest, Wetland   Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
<ul> <li>Stream Flowing</li> <li>Subsurface flow with isolated pools (Interstitial)</li> <li>Moist Channel, isolated pools, no flow (Intermittent)</li> <li>Dry channel, no water (Ephemeral)</li> </ul>	
COMMENTS intermittent	
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)	

	(If Yes, Att	ach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)				
WWH Name: Clear Fork		_ Distance from Evaluated Stream	0.06	m
CWH Name:		_ Distance from Evaluated Stream _		_
EWH Name:		Distance from Evaluated Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE		
SGS Quadrangle Name: Jewett	NRCS Soil Map	Page: NRCS Soil Map Stream	m Order	
Dunty: Harrison Tov	wnship / City:Arche	r		
MISCELLANEOUS				
ase Flow Conditions? (Y/N):_Y Date of last precipitation:	06/11/18	Quantity: <b>0.47</b>		
notograph Information: 3 photos				1
	00%			
	<u>_</u>			_
ere samples collected for water chemistry? (Y/N): _N (Note	lab sample no. or id.	and attach results) Lab Number:		_
eld Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (µmhos/cm)		
the sampling reach representative of the stream (Y/N)	not, please explain:			
ditional comments/description of pollution impacts:				
BIOTIC EVALUATION				
erformed? (Y/N): _N (If Yes, Record all observations. Vouc		al. NOTE: all voucher samples must be		he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of	data sheets from the Pi	al. NOTE: all voucher samples must be rimary Headwater Habitat Assessment M		he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) Salamanders	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) Salamanders	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N): N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq	data sheets from the Pr s Observed? (Y/N)	imary Headwater Habitat Assessment M	fanual)	he s
erformed? (Y/N):N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq omments Regarding Biology:	data sheets from the P s Observed? (Y/N) uatic Macroinvertebra	Voucher? (Y/N) N Voucher? (Y/N) Voucher?	(Y/N) <mark>N</mark>	he s
erformed? (Y/N): (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq omments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTIO	DN OF STREAM	Timary Headwater Habitat Assessment N Voucher? (Y/N) N Ites Observed? (Y/N) Voucher?	(Y/N) N (Y/N) eted):	
erformed? (Y/N): _N (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq omments Regarding Biology:	DN OF STREAM	Timary Headwater Habitat Assessment N Voucher? (Y/N) N Ites Observed? (Y/N) Voucher?	(Y/N) N (Y/N) eted):	
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erformed? (Y/N): (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq omments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTIO Include important landmarks and other features of interest	DN OF STREAM	Timary Headwater Habitat Assessment N Voucher? (Y/N) N Ites Observed? (Y/N) Voucher?	(Y/N) N (Y/N) eted):	
erformed? (Y/N): (If Yes, Record all observations. Vouc ID number. Include appropriate field of sh Observed? (Y/N) N Voucher? (Y/N) N Salamanders ogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aq omments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTIO Include important landmarks and other features of interest	data sheets from the P s Observed? (Y/N) watic Macroinvertebra	Timary Headwater Habitat Assessment N Voucher? (Y/N) N Ites Observed? (Y/N) Voucher?	(Y/N) N (Y/N) eted):	on .



Appendix E Jacobs Open Water/Pond Data Forms

## CH2MHILL

POND DATA SHEET			
FEATURE ID: P-MDT-06062018-01ASSOCIATED FEATURES: Wetland PB-10REPORT ID: POND PB-01Associated Features: Wetland PB-10			
<b>DATE:</b> 06/06/2018	CLIENT/PRO	<b>JECT NAME:</b> FIRSTENERGY / HOLLOWAY-K	NOX 138 KV TRANSMISSION LINE
<b>INVESTIGATORS:</b> M Thomayer, T.	Qualio		
<b>STATE/COUNTY:</b> OH / Harrison			IS THIS A MAPPED NWI FEATURE?: NA
		WATERBODY CHARACTER	ISTICS
WATERBODY TYPE:	Man-made		
AVG. DEPTH:	8 ft		
AVG. WIDTH (WATER SURFACE):	100 ft		
APPROXIMATE SIZE:	0.04 acres w	ithin ROW, @ 1 acre total	
	-	QUALITATIVE ATTRIBU	TES
AVERAGE WATER APPEARANCE:	Slight gree	en tint	
PRIMARY SUBSTRATE (IF     silt       OBSERVED):			
POTENTIAL HABITAT FOR: Amphibians, ducks			
SURROUNDING LAND USE: Forested, cleared ROW, wetland			
WETLAND FRINGE (IF PRESENT):			
COMMENTS			

## CH2MHILL

POND DATA SHEET				
FEATURE ID: P-MDT-06072018-01Associated Features:Report ID: Pond PB-02Associated Features:				
<b>DATE:</b> 06/07/2018	CLIENT/PROJECT NAME: FIRSTENERGY / HOLLOWAY-	Knox 138 kV Transmission Line		
<b>INVESTIGATORS:</b> M Thomayer, T.	Qualio			
STATE/COUNTY: OH / Harrison		IS THIS A MAPPED NWI FEATURE?: NA		
	WATERBODY CHARACTE	RISTICS		
WATERBODY TYPE:	Man-made			
AVG. DEPTH:	10 ft			
AVG. WIDTH (WATER SURFACE):	100 ft			
APPROXIMATE SIZE:	0.03 acres within ROW, @ .5 acre total			
	QUALITATIVE ATTRIBU	JTES		
AVERAGE WATER APPEARANCE: Slight green tint				
PRIMARY SUBSTRATE (IF silt observed):				
POTENTIAL HABITAT FOR: Amphibians, ducks				
SURROUNDING LAND USE: Forested, cleared ROW, wetland				
WETLAND FRINGE (IF PRESENT):				
COMMENTS				

Appendix F Representative Photographs



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-01	PEM	East	5/24/2018



HOLLOWAY-KNOX 138KV TRANSMISSION LINE REBUILD PROJECT-PHASE 3 APPENDIX F - REPRESENTATIVE PHOTOGRAPHS WETLAND AND WATERBODY DELINEATION REPORT



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-03	PEM	South	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-04	PEM	West	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-05	PEM	Southeast	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-06	PEM	Northeast	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-07	PEM	Southeast	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-08	PEM	East	6/06/2018



ſ	Site Name	Cowardin Class	Photo Direction	Date of Survey
	Wetland PB-09	PEM	North	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-10	PEM	East	6/06/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-11	PEM	Northwest	6/07/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-12	PEM	Northwest	6/07/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-13	PEM	East	6/07/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-14	PEM	North	6/07/2018

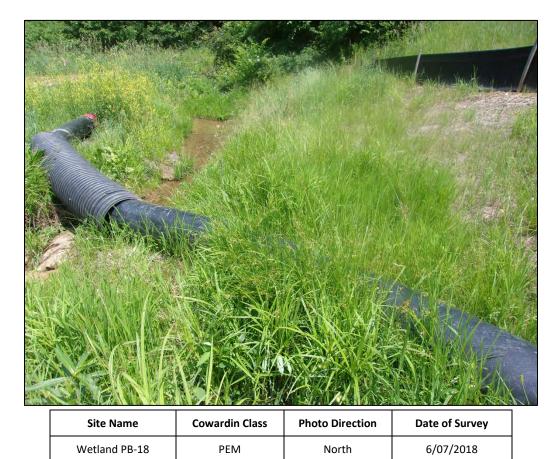


Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-15	PEM	Southeast	6/07/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-17	PEM	South	6/07/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-19	PEM	West	6/11/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-21	PEM	West	6/11/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-22	PEM	Southwest	6/12/2018



S	ite Name	Cowardin Class	Photo Direction	Date of Survey
We	tland PB-23	PEM	Southwest	6/12/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland PB-24	PEM	South	6/12/2018



ſ	Site Name	Cowardin Class	Photo Direction	Date of Survey
	Wetland PB-25	PEM	North	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-01	Ephemeral	Downstream	5/24/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-02	Perennial	Upstream	6/06/2018



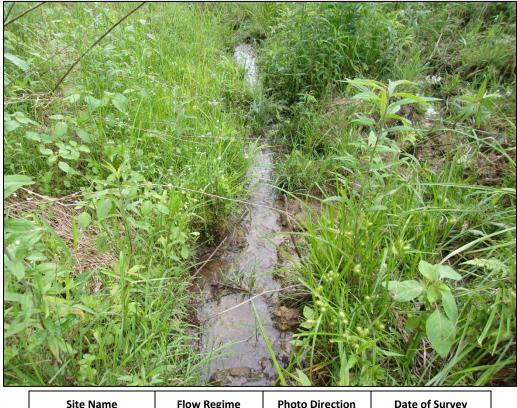
Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-03	Perennial	Upstream	6/06/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-04	Ephemeral	Upstream	6/06/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-05	Ephemeral	Upstream	6/06/2018



Site Name	Flow Regime	Photo Direction	Date of Survey	
Stream PB-06	Ephemeral	Downstream	6/06/2018	



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-07	Intermittent	Downstream	6/06/2018



Site Name	Flow Regime	Photo Direction	Date of Survey	
Stream PB-08	Ephemeral	Downstream	6/06/2018	



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-09	Intermittent	Downstream	6/06/2018



Ephemera	Downstream



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-11	Intermittent	Downstream	6/06/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-12	Perennial	Downstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-13	Ephemeral	Upstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey	
Stream PB-14	Ephemeral	Upstream	6/07/2018	



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-15	Ephemeral	Downstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-16	Perennial	Downstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-17	Intermittent	Upstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-18	Intermittent	Upstream	6/07/2018



Γ	Site Name	Flow Regime	Photo Direction	Date of Survey
	Stream PB-19	Intermittent	Upstream	6/07/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-20	Intermittent	Downstream	06/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-21	Intermittent	Upstream	6/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-22	Ephemeral	Upstream	6/11/2018



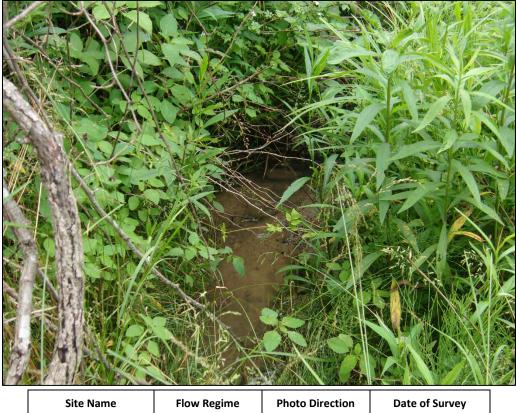
Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-23	Ephemeral	Upstream	6/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-24	Ephemeral	Upstream	6/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-25	Ephemeral	Downstream	6/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-26	Ephemeral	Downstream	6/11/2018



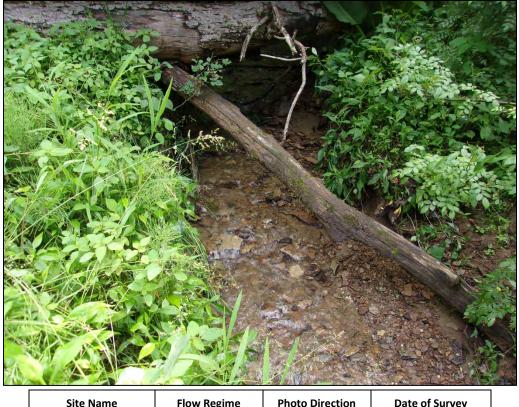
Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-27	Ephemeral	Downstream	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-28	Intermittent	Downstream	6/12/2018



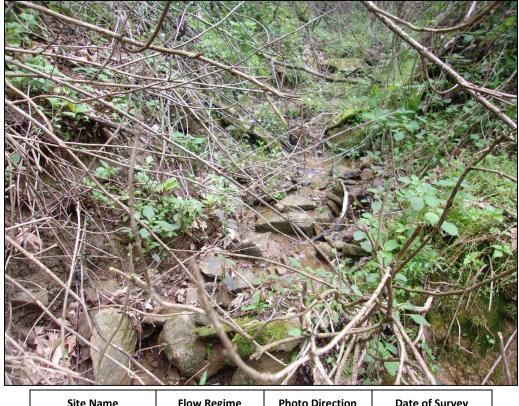
Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-29	Ephemeral	Upstream	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-30	Intermittent	Upstream	6/12/2018



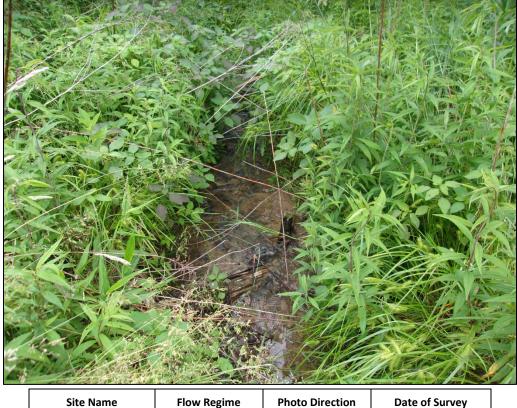
Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-31	Intermittent	Upstream	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-32	Intermittent	Upstream	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream PB-33	Ephemeral	Upstream	6/12/2018



Site Name	Flow Regime	Photo Direction	Date of Survey	
Stream PB-34	Intermittent	Upstream	6/12/2018	

HOLLOWAY-KNOX 138KV TRANSMISSION LINE REBUILD PROJECT PHASE 3 APPENDIX F - REPRESENTATIVE PHOTOGRAPHS WETLAND AND WATERBODY DELINEATION REPORT

HOLLOWAY-KNOX 138KV TRANSMISSION LINE REBUILD PROJECT PHASE 3 APPENDIX F - REPRESENTATIVE PHOTOGRAPHS WETLAND AND WATERBODY DELINEATION REPORT



Site Name	Photo Direction	Date of Survey
Pond PB-01	North	6/06/2018



Site Name	Photo Direction	Date of Survey
Pond PB-02	South	6/07/2018