



Photo 17: View of Wetland W04, facing west.



Photo 18: View of Wetland W04, facing east.

American Electric Power
Gavin 138 kV Extension No. 2 Gallia County, Ohio
Photographs Taken on October 15 and 16; and December 4, 2013



Photo 19: View of data point taken in upland forest habitat, facing west.



Photo 20: View of Wetland W03, facing northeast.



Photo 21: View of Wetland W03, facing east.



Photo 22: View of data point taken in upland forest habitat, facing south.



Photo 23: View of upland forest dominated by Shagbark hickory (*Carya ovata*).



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December 13, 2013

Rebekah Hovermale
American Electric Power
700 Morrison Road
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Subject: Gavin 138 kV Extension No. 2 Transmission Line
American Electric Power
Gallia County, Ohio
Wetland and Waterbody Delineation Report

Dear Rebekah:

This Wetland and Waterbody Delineation Report (Report) summarizes the results of the wetland and waterbody delineation field survey conducted by CH2M HILL Engineers, Inc. (CH2M HILL), on October 15 and 16; and December 4, 2013, on behalf of American Electric Power (AEP) for the Gavin 138 kilovolt (kV) Extension No. 2 Transmission Line Project (the Project; Attachment A). The Project is located just northwest of the town of Cheshire in Gallia County, Ohio, and will connect the Gavin 138kV Extension No. 1 Transmission Line to the Sporn – Portsmouth 138 kV Transmission Line. AEP is proposing to relocate the existing Gavin 138 kV transmission as part of the expansion of the existing Gavin Coal Combustion Resource Landfill. The purpose of delineation is to assess the presence or absence of wetlands, or other waters that may be affected by the proposed Project, and to assess general ecological conditions within the Project area.

Two palustrine emergent wetlands (PEM); two mixed PEM and palustrine forested (PFO) wetlands; and two ponds, including the Gavin Fly Ash Impoundment were identified within the Project area.

BACKGROUND INFORMATION

Before conducting the wetland and waterbody delineation, CH2M HILL reviewed the following resources to identify the potential locations and extent of wetlands and waterbodies within the Project area:

- United States Geological Survey (USGS) topographic map (Addison, 1977 and Cheshire, 1977);
- Aerial photography (Ohio Statewide Imagery Program [OSIP], 2007);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey;
- USGS National Hydrography Dataset (NHD-mapped streams);
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) dataset; and

- Ohio Department of Natural Resources (ODNR) Ohio Wetland Inventory (OWI) dataset.

The USGS topographic map (Figure 1) and NHD-mapped streams dataset (Figure 2), which identify intermittent and perennial streams, identified two unnamed intermittent tributaries to Stingy Run within the central portion of the Project area. Stingy Run is a tributary to Kyger Creek (Hydrologic Unit Code (HUC) 050302020901), located east of the Project area, and subsequently to the Ohio River (HUC 05030202). The USGS topographic map also identifies the Gavin Fly Ash Impoundment which also contains the mapped streams within it (Figure 1).

The USDA NRCS Web Soil Survey shows eight soil unit types within the Project area in addition to water (Figure 3). The mapped soil unit types were of unknown hydric rating. An unknown hydric rating indicates that no components are hydric, and some or all components are not ranked (USDA 2012a). Additionally, the soil unit types within the Project area are not identified on the USDA NRCS Hydric Soils list (2012b). 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.

NWI and OWI maps are used as a guide along with other data to indicate the potential presence of wetlands. The NWI map information is typically dated, and often not field checked. The presence of an NWI or OWI feature is not a definitive indicator that a wetland or waterbody is present. The OWI map identified one shallow marsh in the central portion of the Project area, which corresponds to a field-delineated pond and abutting wetland. The OWI also identified the Gavin Fly Ash Impoundment as open water (Figure 2). The NWI identified three features within the Project area: one palustrine, unconsolidated bottom, intermittently exposed (PUBG); one palustrine, unconsolidated bottom, intermittently exposed, diked/impounded (PUBGh) and one lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked/impounded (L1UBHh) (Figure 2). The L1UBHh feature corresponds to the Gavin Fly Ash Impoundment.

A review of OSIP aerial photography (2007) of the Project area (Figure 4) shows that surrounding land uses are comprised of forested areas, the Gavin Fly Ash Impoundment, and several maintained overhead electric transmission line rights-of-way (ROW).

The attached figures include an overview map, based on a USGS topographic map, showing the Project area, proposed route, proposed access roads, existing transmission lines, and proposed and existing transmission line structures (Figure 1); a map showing NWI, OWI, and NHD features (Figure 2); an NRCS soils map (Figure 3); and an aerial site map showing delineated wetlands and streams (Figures 4A and 4B). Attachment A contains photographic documentation of the delineated wetlands, ponds, and vegetation communities identified within the Project area. Attachment B contains a wetland summary table. Attachment C includes United States Army Corps of Engineers (USACE) wetland determination data forms for the delineated wetlands. Attachment D contains Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method version 5.0 (ORAM) scoring forms. CH2M HILL pond datasheets are included in Attachment E, and USACE wetland determination data forms for select upland areas within the Project area are included in Attachment F.

METHODOLOGY

The Project area consisted of approximately 36 acres. This area includes a survey corridor ranging from 200 to 245 feet wide, over the proposed transmission line route, plus a 20-foot wide corridor centered along six access roads, which are outlined in the table below:

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Access Roads within the Project Area

Gavin 138 kV Extension No. 2 Transmission Line

Access Road	Length (ft)		Width (ft)
	outside survey corridor of Proposed Route	within survey corridor of Proposed Route	
1	1,571	286	20
2	957	136	20
3	1,588	96	20
4	2,693	811	20
5	0	98	20
6	33	105	20

Wetlands and waterbodies were delineated within the Project area in accordance with applicable federal and state regulations and guidance. Wetland boundaries were field-delineated according to the routine onsite methodology described in the 2012 USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0).

The outer boundaries of each identified wetland and the ordinary high water mark (OHWM) for each waterbody within the Project area were delineated and recorded using a Global Positioning System (GPS) unit. As wetland and waterbody features were documented, they were each assigned a unique feature identification (ID) number. Wetland delineation data were recorded on the USACE wetland determination data forms and the OEPA ORAM scoring forms.

VEGETATIVE COMMUNITIES

Vegetative communities within the Project area include old field within the transmission ROW, upland forest, and palustrine wetland. As described in the following section, two PEM wetlands and two mixed PEM/PFO wetlands were identified within the Project area.

The majority of the Project area is dominated by upland forest. Dominant canopy species include sassafras (*Sassafras albidum*), sugar maple (*Acer saccharum*), shagbark hickory (*Carya ovata*), hickory (*Carya* sp.), tuliptree (*Liriodendron tulipifera*), black locust (*Robinia pseudoacacia*), red oak (*Quercus rubra*), silver maple (*Acer saccharinum*), white oak (*Quercus alba*), chestnut oak (*Quercus prinus*), and American elm (*Ulmus americana*). Portions of the understory maintained a sparse to moderately dense shrub layer, including multiflora rose (*Rosa multiflora*), Morrow's honeysuckle (*Lonicera morrowii*), spicebush (*Lindera benzoin*), grape (*Vitis* sp.), American hornbeam (*Carpinus caroliniana*), roundleaf greenbrier (*Smilax rotundifolia*), pawpaw (*Asimina triloba*), and saplings of the canopy species. Dominant herbaceous species included Japanese honeysuckle (*Lonicera japonica*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), Canadian woodnettle (*Laportea canadensis*), needle spikerush (*Eleocharis acicularis*), blunt spikerush (*Eleocharis obtusa*), Nepalese browntop (*Microstegium vimineum*), and barnyard grass (*Echinochloa crus-galli*).

Four transmission line ROWs cross the Project area. These areas contain old field species and forest edge habitat. Dominant vegetation in these areas includes early goldenrod (*Solidago juncea*), Canada goldenrod (*Solidago canadensis*), multiflora rose, dogbane (*Apocynum cannabinum*), and previously identified species from the adjacent upland forest.

A small portion of open land habitat will also be traversed in the southern portion of the Project area. The open land habitat contained orchardgrass (*Dactylis glomerata*), Canada goldenrod, multiflora rose, dogbane, Queen Anne's lace (*Daucus carota*), and Japanese bristlegrass (*Setaria faberi*).

Site photographs documenting vegetation communities within the Project area are included in Attachment A.

WETLANDS AND WATERBODIES

Four wetlands (W01, W02, W03, and W04) and two ponds (P02 and P03) were identified in the Project area. Additional information about wetlands and waterbodies within the Project area is presented below. Summary wetland information is also provided below and in Table 1 (Attachment B). Wetland, stream, and pond datasheets are provided in Attachments C through F.

Category One Wetland

Based on an ORAM score of 25.5, one Category 1 wetland (W01) was identified within the Project area (Attachment D). This wetland (W01) was classified as PEM, and dominated by barnyard grass, common spikerush (*Eleocharis palustris*), and rice cutgrass (*Leersia oryzoides*).

Category 2 Wetlands

With ORAM scores ranging from of 30-46.5, one 1 or 2 gray zone, one Modified Category 2, and one Category 2 wetland were identified within the Project area (Attachment D). It is noted that all of these wetlands would be considered Category 2 wetlands for permitting. Two of these wetlands (W02 and W04) were classified as mixed PEM/PFO wetlands. Dominant plant species in the mixed PEM/PFO wetlands included red maple (*Acer rubrum*), American elm, tuliptree, sassafras, woolgrass (*Scirpus cyperinus*), rice cutgrass, soft rush (*Juncus effusus*), and netted chainfern (*Woodwardia areolata*). The PEM wetland (W03) was dominated by soft rush and rice cutgrass.

The wetlands identified within the Project area appear to be hydrologically connected to surface water systems in the Project area and its vicinity and therefore will likely be considered jurisdictional by the USACE. Note that the USACE makes the final determination of wetland hydrologic connectivity and jurisdiction.

Five 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. These data points were determined not to be wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils. USACE wetland determination data forms for the five upland data points are available in Attachment G.

Waterbodies

No streams were identified within the Project area; however, two upland drainage ditches (UD01 and UD02) were identified. These features are not expected to be considered jurisdictional by the USACE because they do not possess an OHWM.

Two ponds were identified within the Project area (P02 and P03) which have been created by human disturbance. P02 is the Gavin Fly Ash Impoundment. P03 is a small pond in the northern portion of the

Ms. Rebekah Hovermale, AEP

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Project area that is mapped as an NWI PUBG. Additional information about these features is recorded on CH2M HILL pond datasheets provided in Attachment F.

CONCLUSION

This letter report summarizes the results of a wetland and waterbody delineation conducted by CH2M HILL within the proposed Gavin 138 kV Extension No. 2 Transmission Line Project, in Gallia County, Ohio on October 15 and 16; and December 4, 2013. CH2M HILL identified two PEM wetlands and two mixed PEM/PFO wetlands, totaling 0.89 acre, and two ponds, totaling 1.78 acres, within the Project area. The wetlands and ponds have been interpreted as hydrologically connected to surface waters within the Project area, and therefore likely jurisdictional.

We appreciate the opportunity to assist AEP with this project. If you have questions, please feel free to call John Hurd at 513-587-7158.

Sincerely,

CH2M HILL



Lindsey Hescl
Environmental Scientist



John Hurd
Project Manager

Attachments:

- Figures
- Attachment A – Site Photographs
- Attachment B – Wetlands Table
- Attachment C – USACE Wetland Datasheets
- Attachment D – ORAM Datasheets
- Attachment E – CH2M HILL Pond Datasheets
- Attachment F – USACE Upland Datasheets

REFERENCES

Cowardin, L. M., V. Carter, and F. C. Golet. 1979. Classification of Wetlands and Deep Water Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service. Washington D. C. FWS/OBS-79/31.

Mack, John J. Ohio Environmental Protection Agency (OEPA). 2000. *ORAM v. 5.0 Quantitative Score Calibration*. Columbus, Ohio.

Motsch, Bruce R & Gary M. Schaal. Ohio Department of Natural Resources (ODNR). 1991. *Ohio Wetland Inventory – Harrison County*. <http://www.dnr.state.oh.us/tabid/15384/Default.aspx>

Ohio Environmental Protection Agency (OEPA). 2001. *Ohio Rapid Assessment Method for Wetlands Version 5.0: User's Manual and Scoring*. February 2001.

Ohio Environmental Protection Agency (OEPA). 2002. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Final Version 1.0. September 2002.

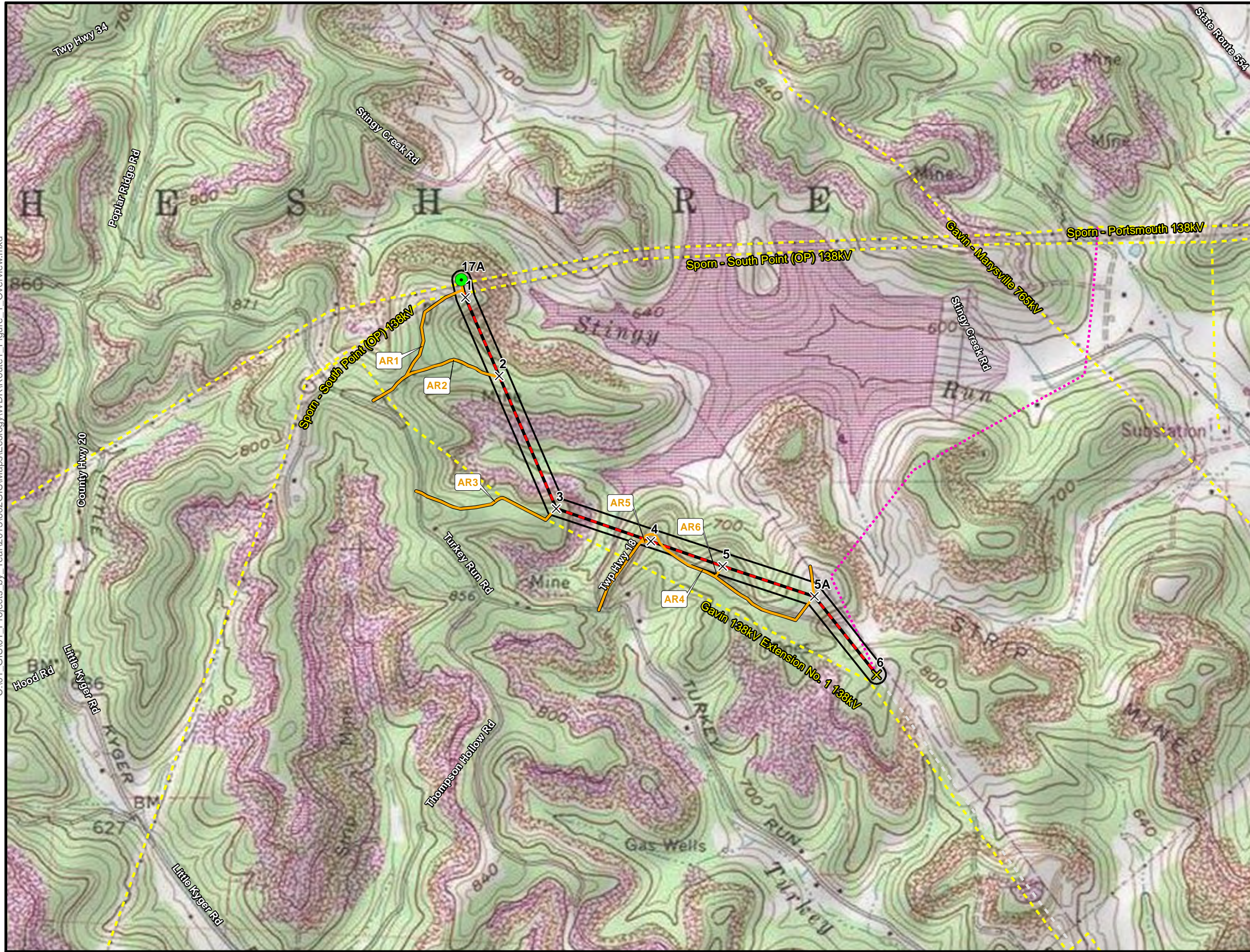
Ohio Environmental Protection Agency (OEPA). 2009. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Review Version 2.3. October 2009.

United States Army Corps of Engineers (USACE). 2012. "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)", ERDC/EL TR-12-9, U.S. Army Engineer Research and Development Center, Vicksburg, MS. April 2012.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. 2012a. Soil Survey Geographic (SSURGO) Database for [Gallia County, Ohio]. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed [08/30/2012].

United States Department of Agriculture, Natural Resource Conservation Service. 2012b. National Hydric Soils List. April 2012.

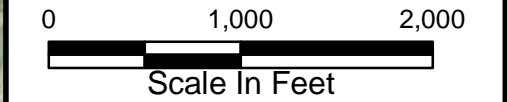
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- LEGEND:**
- Existing Structure
 - Proposed Structure
 - Tap Structure
 - Proposed Access Road
 - Project Area
 - Proposed Route
 - Existing Transmission Line
 - Existing Gavin 138 kV Transmission Line
 - Existing Gavin 138 kV Transmission Line to be Relocated

BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangles:
Addison (published 1977);
Cheshire (published 1977)

LOCATOR MAP SOURCE:
ESRI Data and Maps, 2010:
U.S. States; U.S. Counties

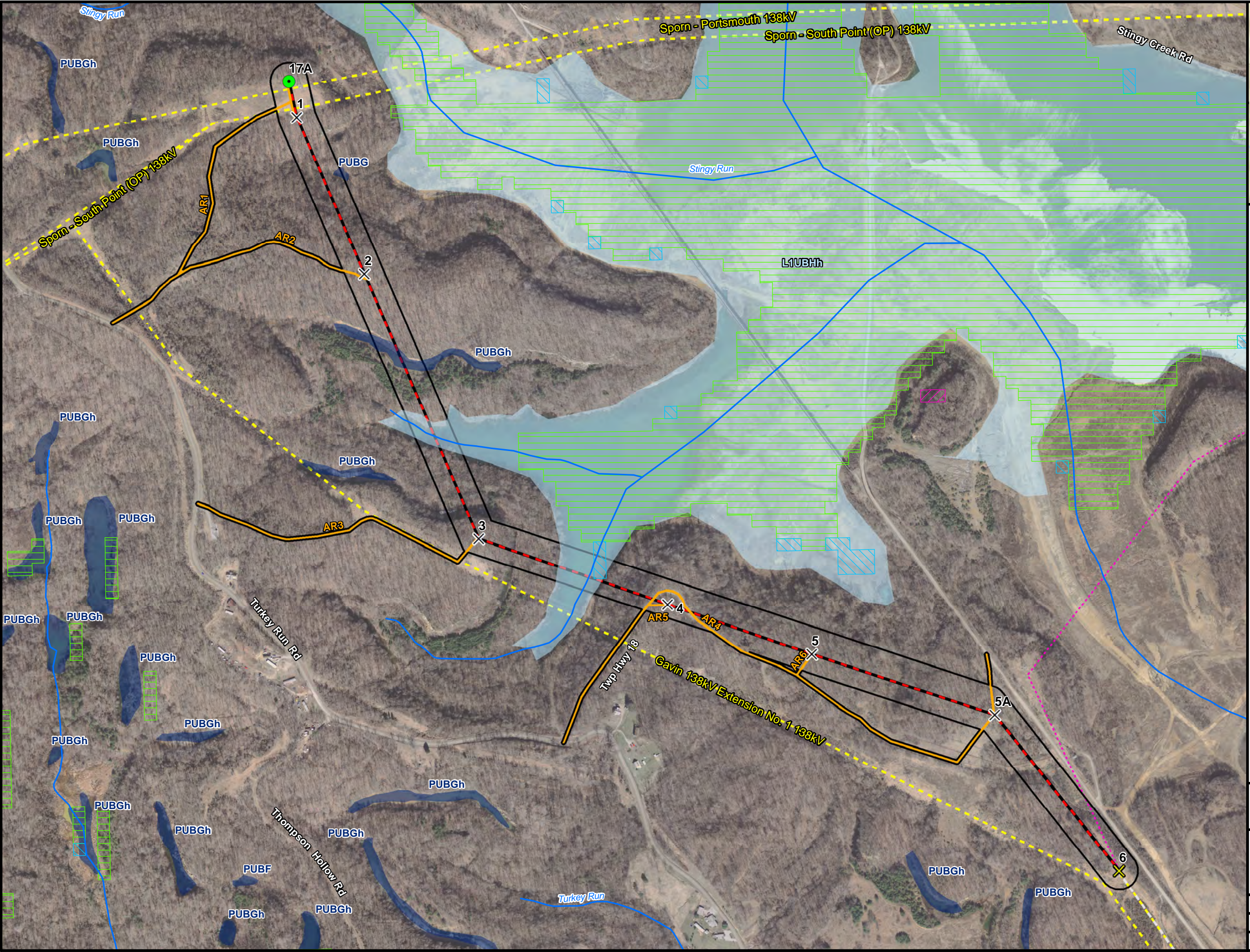


Gavin 138 kV Extension No. 2
Transmission Line

**FIGURE 1
OVERVIEW MAP**

PN: 457954	DATE: 12/9/2013
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REVIEWED BY: JH	

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LEGEND:

- Existing Structure
- Proposed Structure
- Tap Structure
- Project Area
- Proposed Route
- Proposed Access Road
- Existing Gavin 138 kV Transmission Line
- Existing Transmission Line
- Existing Gavin 138 kV Transmission Line to be Relocated
- Stream (NHD)

National Wetland Inventory

- Freshwater Pond
- Lake

Ohio Wetland Inventory

- Open Water
- Shallow Marsh (Emergent Vegetation)
- Shrub/Scrub Wetland


LOCATOR MAP SOURCE:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

BASE MAP SOURCE:
Ohio Statewide Imagery Program (OSIP), 2007
Gallia County

DATA SOURCE:
Streams (National Hydrography Dataset) - US Geological Survey

Wetlands - National Wetland Inventory (NWI) - US Fish and Wildlife Service; Ohio Wetland Inventory (OWI) - Ohio Department of Natural Resources; Previously Delineated - AEP

0 500 1,000
Scale In Feet



Gavin 138 kV Extension No. 2
Transmission Line


FIGURE 2
OHIO AND NATIONAL WETLAND
INVENTORY AND NATIONAL
HYDROGRAPHY DATASET MAP

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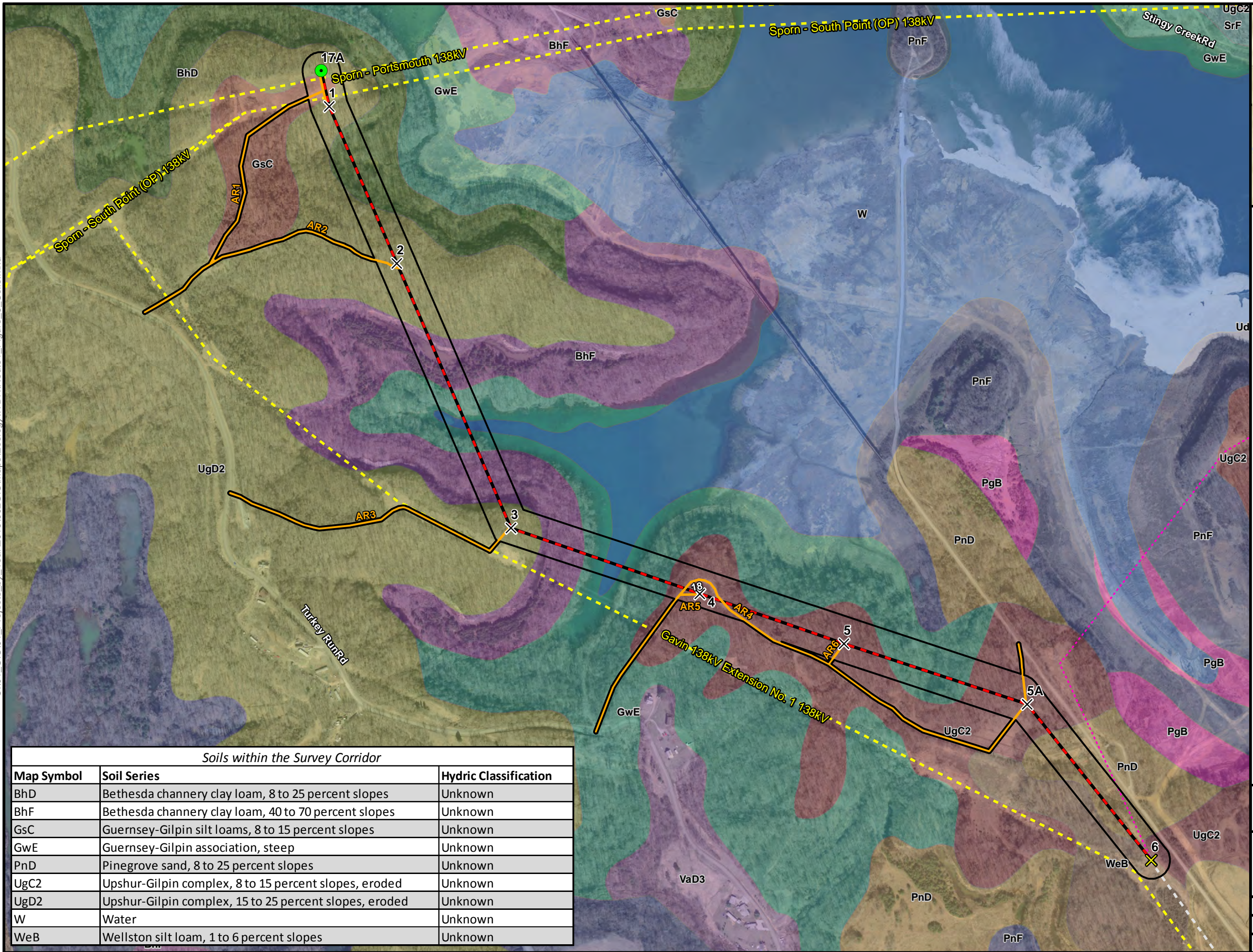
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REVIEWED BY: JH

DATE: 12/9/2013



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LEGEND:

- Existing Structure
- Proposed Structure
- Tap Structure
- Existing Transmission Line
- Existing Gavin 138 kV Transmission Line
- Existing Gavin 138 kV Transmission Line to be Relocated
- Proposed Route
- Proposed Access Road
- Project Area

Soil Series Boundary and Map Symbol

BhD	PnD	UgD2
BhF	PnF	VaD3
GsC	SrF	W
GwE	Ud	WeB
PgB	UgC2	

LOCATOR MAP SOURCE:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

BASE MAP SOURCE:
Ohio Statewide Imagery Program (OSIP), 2007
Gallia County

DATA SOURCE:
Soils - Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Gallia County, Ohio.

0 500 1,000
Scale In Feet

Soils within the Survey Corridor		
Map Symbol	Soil Series	Hydric Classification
BhD	Bethesda channery clay loam, 8 to 25 percent slopes	Unknown
BhF	Bethesda channery clay loam, 40 to 70 percent slopes	Unknown
GsC	Guernsey-Gilpin silt loams, 8 to 15 percent slopes	Unknown
GwE	Guernsey-Gilpin association, steep	Unknown
PnD	Pinegrove sand, 8 to 25 percent slopes	Unknown
UgC2	Upshur-Gilpin complex, 8 to 15 percent slopes, eroded	Unknown
UgD2	Upshur-Gilpin complex, 15 to 25 percent slopes, eroded	Unknown
W	Water	Unknown
WeB	Wellston silt loam, 1 to 6 percent slopes	Unknown

AEP | Gavin 138 kV Extension No. 2 Transmission Line

**FIGURE 3
SOILS MAP**

PN: 457954	DATE: 12/9/2013
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REVIEWED BY: JH	

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LEGEND:

- ✕ Proposed Structure
- Tap Structure
- Existing Transmission Line
- Proposed Route
- Proposed Access Road
- ▼▼▼ Open-Ended Feature
- Project Area
- Contour (20-ft. Interval)

Delineated Waterbodies

- Upland Drainage
- Pond

Delineated Wetlands

- Palustrine Emergent
- Palustrine Forested

Data Points

- Wetland
- Upland

LOCATOR MAP SOURCE:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

BASE MAP SOURCE:
Ohio Statewide Imagery Program (OSIP), 2007
Gallia County

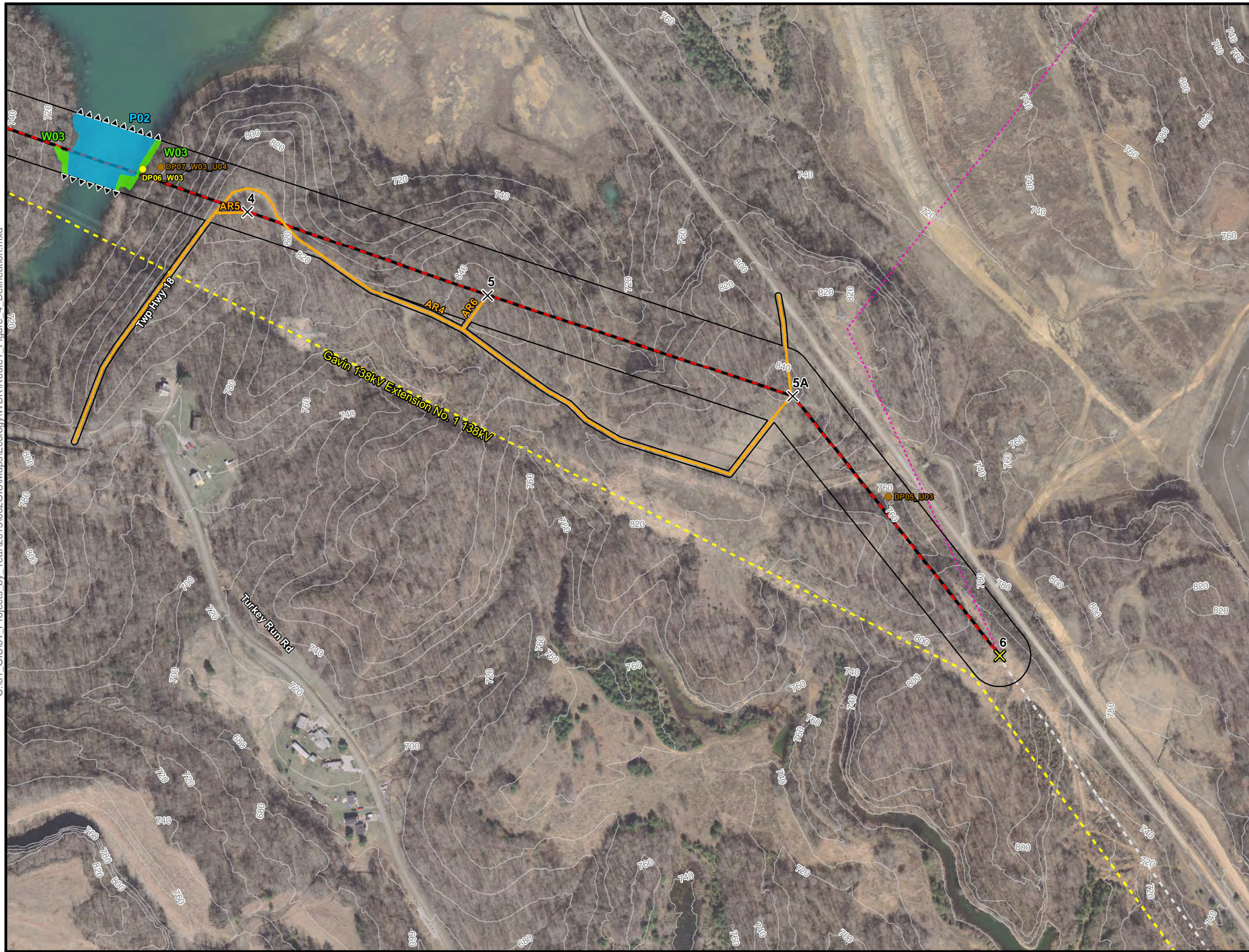
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Scale In Feet

AEP | Gavin 138 kV Extension No. 2
Transmission Line

**FIGURE 4A
WETLANDS AND WATERBODIES**


PN: 457954	DATE: 12/10/2013
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REVIEWED BY: JH	

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- LEGEND:**
- Existing Structure
 - Proposed Structure
 - Existing Transmission Line
 - Existing Gavin 138 kV Transmission Line
 - Existing Gavin 138 kV Transmission Line to be Relocated
 - Proposed Route
 - Proposed Access Road
 - Open-Ended Feature
 - Project Area
 - Contour (20-ft. Interval)
 - Pond
 - Delineated Wetlands**
 - Palustrine Emergent
 - Data Points**
 - Wetland
 - Upland
- LOCATOR MAP SOURCE:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
- BASE MAP SOURCE:
Ohio Statewide Imagery Program (OSIP), 2007
Gallia County





Gavin 138 kV Extension No. 2
Transmission Line


FIGURE 4B
WETLANDS AND WATERBODIES

PN: 457954

DATE: 12/10/2013

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REVIEWED BY: JH



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Case No(s). 13-2412-EL-BLN

Summary: Letter of Notification Gavin 138kV Extension No. 2 Relocation Project (Part 2 of 4)
electronically filed by Mr. Yazen Alami on behalf of Ohio Power Company