

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: W-BAO-012121-01

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: 0    20% of total cover: 0																		
Sapling Stratum (Plot size: 15' )																		
1. Salix nigra	5	Y	OBL															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: 3    20% of total cover: 1																		
Shrub Stratum (Plot size: 15' )																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: 0    20% of total cover: 0																		
Herb Stratum (Plot size: 5' )																		
1. Typha angustifolia	90	Y	OBL															
2. Scirpus atrovirens	5	N	OBL															
3. Juncus canadensis	20	N	OBL															
4. Scirpus cyperinus	5	N	FACW															
5. Andropogon virginicus	5	N	FACU															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: 63    20% of total cover: 25																		
Woody Vine Stratum (Plot size: 30' )																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: 0    20% of total cover: 0																		
Remarks: (Include photo numbers here or on a separate sheet.)				<div> <b>Dominance Test worksheet:</b>                      Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)                       Total Number of Dominant Species Across All Strata: 2 (B)                       Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)                 </div> <div> <b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species 120</td> <td>x 1 = 120</td> </tr> <tr> <td>FACW species 5</td> <td>x 2 = 10</td> </tr> <tr> <td>FAC species 0</td> <td>x 3 = 0</td> </tr> <tr> <td>FACU species 5</td> <td>x 4 = 20</td> </tr> <tr> <td>UPL species 0</td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals: 130 (A)</td> <td>150 (B)</td> </tr> </table>                     Prevalence Index = B/A = 1.15                 </div> <div> <b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation  <input checked="" type="checkbox"/> 2 - Dominance Test is &gt;50%  <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0<sup>1</sup>                      ___ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)                      ___ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)   <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                 </div> <div> <b>Definitions of Five Vegetation Strata:</b>   <b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).   <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.   <b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.   <b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.   <b>Woody vine</b> – All woody vines, regardless of height.                 </div> <div> <b>Hydrophytic Vegetation Present?</b>    Yes <input checked="" type="checkbox"/>    No _____                 </div>	Total % Cover of:	Multiply by:	OBL species 120	x 1 = 120	FACW species 5	x 2 = 10	FAC species 0	x 3 = 0	FACU species 5	x 4 = 20	UPL species 0	x 5 = 0	Column Totals: 130 (A)	150 (B)
Total % Cover of:	Multiply by:																	
OBL species 120	x 1 = 120																	
FACW species 5	x 2 = 10																	
FAC species 0	x 3 = 0																	
FACU species 5	x 4 = 20																	
UPL species 0	x 5 = 0																	
Column Totals: 130 (A)	150 (B)																	

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
—								
—								
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

#### Hydric Soil Indicators:

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

#### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): No

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No \_\_\_\_\_

Remarks:

Soils were not obtained due to US DOE restrictions on digging in the area. Assumed hydric due to strong vegetative and hydrologic indicators.



# Upland AS-005

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/21/2021  
 Applicant/Owner: AEP State: OH Sampling Point: U-BAO-012121-01  
 Investigator(s): BAO, JFW Section, Township, Range: S 18 T 4N R 21 W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Flat Slope (%): 0  
 Subregion (LRR or MLRA): LRR N Lat: 39.01474 Long: -83.00554 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)  
 Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X No         
 Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>      </u> No <u>X</u>
Remarks: Upland point associated with Wetland AS-005 (W-BAO-012121-01). Soil sample was unable to be observed due to US DOE restrictions in area due to various underground electrical wires	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Water Table Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Saturation Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

 Sampling Point: U-BAO-012121-01

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Sapling Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
<b>Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Andropogon gerardii</u>	40	Y	FAC	
2. <u>Erigeron annuus</u>	20	Y	FACU	
3. <u>Daucus carota</u>	20	Y	UPL	
4. <u>Setaria pumila</u>	10	N	FAC	
5. <u>Trifolium repens</u>	10	N	FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>50</u>	x 3 = <u>150</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>20</u>	x 5 = <u>100</u>
Column Totals: <u>100</u> (A)	<u>370</u> (B)

 Prevalence Index = B/A = 3.7

**Hydrophytic Vegetation Indicators:**  
   1 - Rapid Test for Hydrophytic Vegetation  
   2 - Dominance Test is >50%  
   3 - Prevalence Index is ≤3.0<sup>1</sup>  
   4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**Definitions of Five Vegetation Strata:**  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes    No X

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

#### Hydric Soil Indicators:

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

#### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

#### Restrictive Layer (if observed): Yes

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

#### Remarks:

Soil sample was unable to be observed due to US DOE restrictions in area. Soils estimated due to restriction based on relative topography and plant species.

# Wetland AS-006

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/21/2021  
 Applicant/Owner: AEP State: OH Sampling Point: W-BAO-012121-04  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR N Lat: 39.01328 Long: -83.01067 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: PEM wetland fed by a culvert and drains to Pond AS-001.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input checked="" type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1.00</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0.00</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: W-BAO-012121-04

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
				0 = Total Cover
50% of total cover: 0				20% of total cover: 0
<u>Sapling Stratum</u> (Plot size: 15' )				
1. <i>Platanus occidentalis</i>	20	Y	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
				20 = Total Cover
50% of total cover: 10				20% of total cover: 4
<u>Shrub Stratum</u> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
				0 = Total Cover
50% of total cover: 0				20% of total cover: 0
<u>Herb Stratum</u> (Plot size: 5' )				
1. <i>Juncus effusus</i>	30	Y	FACW	
2. <i>Phalaris arundinacea</i>	60	Y	FACW	
3. <i>Dichanthelium clandestinum</i>	10	N	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				100 = Total Cover
50% of total cover: 50				20% of total cover: 20
<u>Woody Vine Stratum</u> (Plot size: 30' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				0 = Total Cover
50% of total cover: 0				20% of total cover: 0
Remarks: (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <span style="float: right;">0</span>	x 1 = <span style="float: right;">0</span>
FACW species <span style="float: right;">110</span>	x 2 = <span style="float: right;">220</span>
FAC species <span style="float: right;">10</span>	x 3 = <span style="float: right;">30</span>
FACU species <span style="float: right;">0</span>	x 4 = <span style="float: right;">0</span>
UPL species <span style="float: right;">0</span>	x 5 = <span style="float: right;">0</span>
Column Totals: <span style="float: right;">120 (A)</span>	<span style="float: right;">250 (B)</span>

Prevalence Index = B/A = 2.08

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**

	Yes <input checked="" type="checkbox"/>	No _____
--	---	----------

## SOIL

Sampling Point: W-BAO-012121-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 — 10	10YR 4/2	90	10YR 6/8	10	C	M	Silty clay loam	
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
							<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.	
							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators:</b>								
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Dark Surface (S7)			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 147, 148)</b>		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input checked="" type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 136, 147)</b>		
<input type="checkbox"/> Stratified Layers (A5)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N,</b> <b>MLRA 147, 148</b> )			<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N,</b> <b>MLRA 136</b> )					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )					
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )					
<b>Restrictive Layer (if observed): No</b>								
Type: _____								
Depth (inches): _____							<b>Hydric Soil Present? Yes <u>X</u> No _____</b>	
Remarks: US Department of Energy property does not allow digging past 12"								

**Upland AS-006**  
**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/21/2021  
 Applicant/Owner: AEP State: OH Sampling Point: U-BAO-012121-04  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR or MLRA): LRR N Lat: 39.01329 Long: -83.01060 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation ✓, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Upland point associated with W-BAO-012121-04 vegetation mowed	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: U-BAO-012121-04

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Sapling Stratum (Plot size: 15' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Shrub Stratum (Plot size: 15' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Herb Stratum (Plot size: 5' )</b>				
1. <i>Dichanthelium clandestinum</i>	30	Y	FAC	
2. <i>Allium canadense</i>	10	N	FACU	
3. <i>Setaria pumila</i>	10	N	FAC	
4. <i>Poa</i> sp.	50	Y		
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 50    20% of total cover: 20				
<b>Woody Vine Stratum (Plot size: 30' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 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 worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>50</u> (A)	<u>160</u> (B)

Prevalence Index = B/A = 3.2

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 \_\_\_ 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**  
  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**      Yes             No   X



## SOIL

Sampling Point: U-BAO-012121-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 — 10	10YR 4/3	80	10YR 4/6	20	C	M	Silty clay loam	
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b>			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input checked="" type="checkbox"/> ( <b>MLRA 147, 148</b> )			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> ( <b>MLRA 136, 147</b> )			
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> )	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )				

Restrictive Layer (if observed): No

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks:  
US Department of Energy property does not allow digging past 12"

# Wetland AS-007

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/22/2021  
 Applicant/Owner: AEP State: OH Sampling Point: W-BAO-012221-01  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Gulch or Gully Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR N Lat: 39.01074 Long: -83.01210 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)  
 Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X No         
 Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>      </u> Hydric Soil Present? Yes <u>X</u> No <u>      </u> Wetland Hydrology Present? Yes <u>X</u> No <u>      </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>      </u>
Remarks: PEM linear wetland in maintained transmission line ROW, between two built up mounds	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Surface Water (A1)  <input checked="" type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No <u>      </u> Depth (inches): <u>2.00</u> Water Table Present? Yes <u>X</u> No <u>      </u> Depth (inches): <u>5.00</u> Saturation Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u>      </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: W-BAO-012221-01

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Sapling Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Shrub Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Herb Stratum</b> (Plot size: 5' )				
1. <i>Scirpus cyperinus</i>	10	N	FACW	
2. <i>Equisetum hyemale</i>	10	N	FACW	
3. <i>Juncus effusus</i>	30	Y	FACW	
4. <i>Eupatorium perfoliatum</i>	20	Y	FACW	
5. <i>Cyperus esculentus</i>	10	N	FACW	
6. <i>Carex cristatella</i>	10	N	FACW	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 45    20% of total cover: 18				
<b>Woody Vine Stratum</b> (Plot size: 30' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
  
 Total Number of Dominant Species Across All Strata: 2 (B)  
  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>90</u>	x 2 = <u>180</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>90</u> (A)	<u>180</u> (B)

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**  
  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**      Yes ☒      No \_\_\_\_\_

## SOIL

Sampling Point: W-BAO-012221-01

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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (**LRR N**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbria Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): No

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

Remarks:

US Department of Energy property does not allow digging past 12"

# Upland AS-007

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/22/2021  
 Applicant/Owner: AEP State: OH Sampling Point: U-BAO-012221-01  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): LRR N Lat: 39.01056 Long: -83.01210 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)  
 Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X No         
 Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>      </u> No <u>X</u>
Remarks: Upland point associated with W-BAO-012221-01	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Water Table Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Saturation Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: U-BAO-012221-01

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Sapling Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Shrub Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Herb Stratum</b> (Plot size: 5' )				
1. <i>Asclepias syriaca</i>	10	N	FACU	
2. <i>Pycnanthemum virginianum</i>	10	N	FAC	
3. <i>Setaria pumila</i>	30	Y	FAC	
4. <i>Equisetum hyemale</i>	5	N	FACW	
5. <i>Schedonorus arundinaceus</i>	60	Y	FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 58    20% of total cover: 23				
<b>Woody Vine Stratum</b> (Plot size: 30' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 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 worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>410</u> (B)

 Prevalence Index = B/A = 3.57

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 \_\_\_ 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**      Yes             No X

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 — 10	10YR 4/3	70	10YR 5/6	30	C	M	Silty clay loam	
—								
—								
—								
—								
—								
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—								
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—								
—								
—								
—								
—								
—								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):** No

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X**Remarks:**

US Department of Energy property does not allow digging past 12"

# Wetland AS-008

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/22/2021  
 Applicant/Owner: AEP State: OH Sampling Point: W-BAO-012221-02  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR N Lat: 39.00827 Long: -83.01237 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: PEM wetland in t-line ROW	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input checked="" type="checkbox"/> High Water Table (A2)  <input checked="" type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>4.00</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0.00</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		



**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: W-BAO-012221-02

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Sapling Stratum (Plot size: 15' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Shrub Stratum (Plot size: 15' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Herb Stratum (Plot size: 5' )</b>				
1. <i>Eupatorium perfoliatum</i>	20	N	FACW	
2. <i>Typha angustifolia</i>	30	Y	OBL	
3. <i>Mimulus ringens</i>	10	N	OBL	
4. <i>Dichanthelium clandestinum</i>	20	N	FAC	
5. <i>Juncus effusus</i>	10	N	FACW	
6. <i>Carex squarrosa</i>	30	Y	FACW	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 60    20% of total cover: 24				
<b>Woody Vine Stratum (Plot size: 30' )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>40</u>	x 1 = <u>40</u>
FACW species <u>60</u>	x 2 = <u>120</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>120</u> (A)	<u>220</u> (B)

 Prevalence Index = B/A = 1.83

**Hydrophytic Vegetation Indicators:**  
   1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
X 3 - Prevalence Index is ≤3.0<sup>1</sup>  
   4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**Definitions of Five Vegetation Strata:**  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**      Yes X      No

## SOIL

Sampling Point: W-BAO-012221-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 — 10	10YR 4/2		7.5YR 4/6	10	C	PL	silty clay loam	
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators:</b>								
<div><div><input type="checkbox"/> Histosol (A1)</div><div><input type="checkbox"/> Histic Epipedon (A2)</div><div><input type="checkbox"/> Black Histic (A3)</div><div><input type="checkbox"/> Hydrogen Sulfide (A4)</div><div><input type="checkbox"/> Stratified Layers (A5)</div><div><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</div><div><input type="checkbox"/> Depleted Below Dark Surface (A11)</div><div><input type="checkbox"/> Thick Dark Surface (A12)</div><div><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</div><div><input type="checkbox"/> Sandy Gleyed Matrix (S4)</div><div><input type="checkbox"/> Sandy Redox (S5)</div><div><input type="checkbox"/> Stripped Matrix (S6)</div></div> <div><div><input type="checkbox"/> Dark Surface (S7)</div><div><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)</div><div><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</div><div><input type="checkbox"/> Loamy Gleyed Matrix (F2)</div><div><input type="checkbox"/> Depleted Matrix (F3)</div><div><input checked="" type="checkbox"/> Redox Dark Surface (F6)</div><div><input type="checkbox"/> Depleted Dark Surface (F7)</div><div><input type="checkbox"/> Redox Depressions (F8)</div><div><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</div><div><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</div><div><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</div><div><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</div></div>								
<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>								
<div><div><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</div><div><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)</div><div><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</div><div><input type="checkbox"/> Very Shallow Dark Surface (TF12)</div><div><input type="checkbox"/> Other (Explain in Remarks)</div></div>								
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
<b>Restrictive Layer (if observed):</b> No								
Type: _____								
Depth (inches): _____								
<b>Hydric Soil Present?</b> Yes <u>  X  </u> No <u>      </u>								
Remarks:								
US Department of Energy property does not allow digging past 12"								

Upland AS-008  
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Arboles Station and Transmission Lines Project City/County: Pike County Sampling Date: 01/22/2021  
 Applicant/Owner: AEP State: OH Sampling Point: U-BAO-012221-02  
 Investigator(s): BAO, JFW Section, Township, Range: S 7 T 4N R 22W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): LRR N Lat: 39.00835 Long: -83.01239 Datum: WGS 84  
 Soil Map Unit Name: UoA: Urbanland-Omulga complex, 0 to 6 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Upland point associated with W-BAO-012221-02	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: U-BAO-012221-02

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Sapling Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Shrub Stratum</b> (Plot size: 15' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Herb Stratum</b> (Plot size: 5' )				
1. <i>Schedonorus arundinaceus</i>	40	Y	FACU	
2. <i>Dichanthelium clandestinum</i>	50	Y	FAC	
3. <i>Setaria pumila</i>	10	N	FAC	
4. <i>Asclepias syriaca</i>	10	N	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 55    20% of total cover: 22				
<b>Woody Vine Stratum</b> (Plot size: 30' )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: 0    20% of total cover: 0				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**  
 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 worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>60</u>	x 3 = <u>180</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>110</u> (A)	<u>380</u> (B)

Prevalence Index = B/A = 3.45

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 \_\_\_ 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**  
  
**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
  
**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
  
**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
  
**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
  
**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**      Yes           No X

## SOIL

Sampling Point: U-BAO-012221-02

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 — 10	10YR 4/3	70	10YR 5/6	30	C	M	Silty clay loam	
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								
—								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

## Hydric Soil Indicators:

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): No

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks:

US Department of Energy property does not allow digging past 12"

**Appendix C**  
**Ohio Rapid Assessment Method for Wetlands (ORAM)**  
**Forms**

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<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012021-01	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/20/2021
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1.0	1.0
-----	-----

max 6 pts. subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

4.0	5.0
-----	-----

max 14 pts. subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

7.0	12.0
-----	------

max 30 pts. subtotal

### Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

7.0	19.0
-----	------

max 20 pts. subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

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

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

19.0
------

subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012021-01	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/20/2021
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19.0

subtotal first page

0.0	19.0
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-3	16
----	----

max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1

 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ✓

 None (0)

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

- ✓

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- 1

 Amphibian breeding pools

### Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

16

**GRAND TOTAL (max 100 pts)**



<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012021-02	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/20/2021
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## 0.0 0.0 Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

## 7.0 7.0 Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

## 6.0 13.0 Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

## 6.0 19.0 Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

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

Check all disturbances observed

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

19.0

subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012021-02	<b>Rater(s):</b> B Otto;	<b>J Wessel</b>	<b>Date:</b> 01/20/2021
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19.0

subtotal first page

0.0	19.0
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2	21
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

21

**GRAND TOTAL (max 100 pts)**

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-05	<b>Rater(s):</b> B Otto;	<b>J Wessel</b>	<b>Date:</b> 01/21/2021
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<b>1.0</b>	<b>1.0</b>
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

<b>7.0</b>	<b>8.0</b>
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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

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

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

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

<b>10.0</b>	<b>18.0</b>
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed	
<input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input checked="" type="checkbox"/> other ROW maintenance and construction; at junction

<b>8.0</b>	<b>26.0</b>
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

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

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

<b>26.0</b>
subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-05	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/21/2021
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26.0

subtotal first page

<b>0.0</b>	<b>26.0</b>
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

<b>3</b>	<b>29</b>
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

<b>29</b>	<b>GRAND TOTAL (max 100 pts)</b>
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<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-02	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/21/2021
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<b>1.0</b>	<b>1.0</b>
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max 6 pts.      subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

<b>2</b>	<b>3.0</b>
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max 14 pts.      subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

<b>6.0</b>	<b>9.0</b>
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max 30 pts.      subtotal

### Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

<b>8.0</b>	<b>17.0</b>
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max 20 pts.      subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

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

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

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

<b>17.0</b>
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subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-02	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/21/2021
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17.0

subtotal first page

0.0	17.0
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4	21
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

21	<b>GRAND TOTAL (max 100 pts)</b>
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<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-01	<b>Rater(s):</b> B Otto;	<b>J Wessel</b>	<b>Date:</b> 01/21/2021
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<b>1.0</b>	<b>1.0</b>
------------	------------

max 6 pts.      subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

<b>2</b>	<b>3.0</b>
----------	------------

max 14 pts.      subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

<b>8.0</b>	<b>11.0</b>
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max 30 pts.      subtotal

### Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

<b>6.0</b>	<b>17.0</b>
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max 20 pts.      subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

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

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

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

<b>17.0</b>
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subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-01	<b>Rater(s):</b> B Otto; J Wessel	<b>Date:</b> 01/21/2021
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17.0

subtotal first page

0.0	17.0
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-2	15
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1

 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ✓

 Low (1)
- ☐ None (0)

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

- ✓

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- 1

 Amphibian breeding pools

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

15	<b>GRAND TOTAL (max 100 pts)</b>
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<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-04	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/21/2021
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2.0	2.0
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max 6 pts. subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

2.0	4.0
-----	-----

max 14 pts. subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

15.0	19.0
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max 30 pts. subtotal

### Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

9.0	28.0
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max 20 pts. subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

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

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

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

28.0
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subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012121-04	<b>Rater(s):</b> B Otto;	<b>J Wessel</b>	<b>Date:</b> 01/21/2021
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28.0

subtotal first page

<b>0.0</b>	<b>28.0</b>
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

<b>4</b>	<b>32</b>
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☒ 1 Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

**32**

**GRAND TOTAL (max 100 pts)**

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012221-01	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/22/2021
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## 1.0 1.0 Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)  
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)  
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)  
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)  
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)  
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  
☐ <0.1 acres (0.04ha) (0 pts)

## 7.0 8.0 Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

## 8.0 16.0 Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

## 7.0 23.0 Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

- ☐ None or none apparent (4)  
☐ Recovered (3)  
☒ Recovering (2)  
☐ Recent or no recovery (1)

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

- ☐ Excellent (7)  
☐ Very good (6)  
☐ Good (5)  
☐ Moderately good (4)  
☐ Fair (3)  
☒ Poor to fair (2)  
☐ Poor (1)

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

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

Check all disturbances observed

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

23.0

subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012221-01	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/22/2021
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23.0

subtotal first page

0.0	23.0
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1	22
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max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

22	<b>GRAND TOTAL (max 100 pts)</b>
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<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012221-02	<b>Rater(s):</b> B Otto;	J Wessel	<b>Date:</b> 01/22/2021
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## 1.0 1.0 Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

## 7.0 8.0 Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

## 9.0 17.0 Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

## 8.0 25.0 Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

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

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

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

25.0

subtotal this page

<b>Site:</b> AEP Arboles Station and T-Lines, W-BAO-012221-02	<b>Rater(s):</b> B Otto; J Wessel	<b>Date:</b> 01/22/2021
---	-----------------------------------	-------------------------

25.0

subtotal first page

0.0	25.0
-----	------

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2	27
---	----

max 20 pts.

subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

27	<b>GRAND TOTAL (max 100 pts)</b>
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**Appendix D**  
**Primary Headwater Habitat Evaluation Index (HHEI)**  
**Stream Data Forms**

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## Primary Headwater Habitat Field Evaluation Form

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

17

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-01**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0001** DRAINAGE AREA (mi<sup>2</sup>) **0.001**LENGTH OF STREAM REACH (ft) **200** LAT **39.02297** LONG **-83.01206** RIVER MILE DATE **01/20/2021** SCORER **BAO, JFW** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY  
May not have existed prior to modification. Substation drainage

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">7</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	0%	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	0%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> SILT [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> ARTIFICIAL [3 pts]</td><td>100%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> SILT [3 pts]	0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%	<input type="checkbox"/> MUCK [0 pts]	0%	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	100%		
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Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>0%</b>		(A) <b>6</b>	(B) <b>1</b>																													
<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6</b>				<b>TOTAL NUMBER OF SUBSTRATE TYPES: 1</b>																												
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COMMENTS <b></b> AVERAGE BANKFULL WIDTH (feet) <b>3.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage	<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop	<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS 

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input checked="" type="checkbox"/> 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)

<input checked="" type="checkbox"/> WWH Name:	Little Beaver Creek	Distance from Evaluated Stream	0.80 mile
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: Piketon, OH NRCS Soil Map Page:        NRCS Soil Map Stream Order:         
County: Pike Township/City: Scioto Township

## MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/16/21 Quantity: 0.20

Photo-documentation Notes: \_\_\_\_\_

Elevated Turbidity?(Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):

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

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

Additional comments/description of pollution impacts:

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

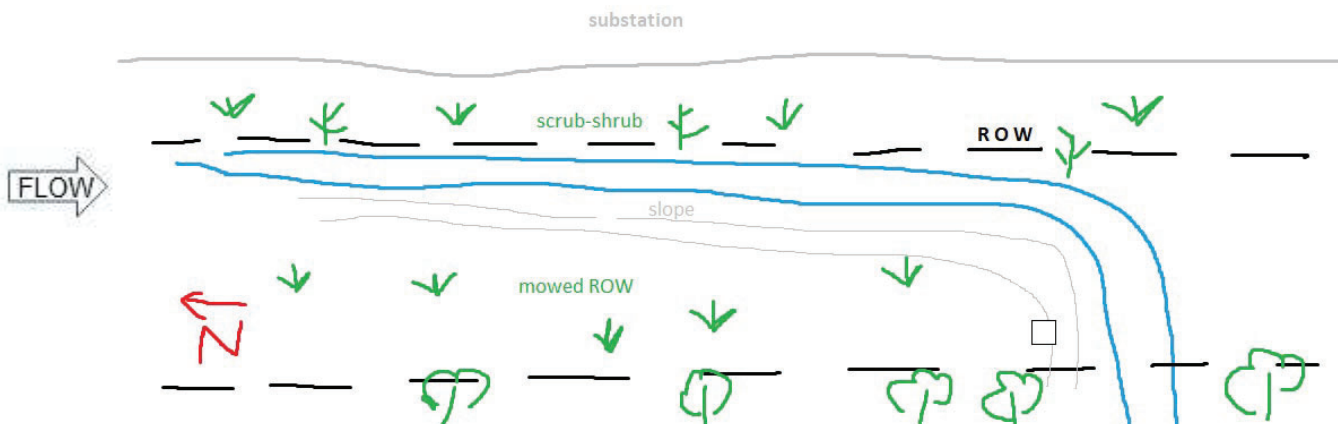
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Comments Regarding Biology:

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

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





## Primary Headwater Habitat Field Evaluation Form

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

27

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-02**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.010** DRAINAGE AREA (mi<sup>2</sup>) **0.010**LENGTH OF STREAM REACH (ft) **129** LAT **39.02164** LONG **-83.01314** RIVER MILE DATE **01/20/2021** SCORER **BAO** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Riparian cleared

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">17</div> A + B																												
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TYPE	PERCENT																															
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COMMENTS <b></b> MAXIMUM POOL DEPTH (inches) <b>1.00</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">5</div>																												
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COMMENTS <b></b> AVERAGE BANKFULL WIDTH (feet) <b>3.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS 

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	--	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Little Beaver Creek	Distance from Evaluated Stream	0.82 mile
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) ☒ N Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
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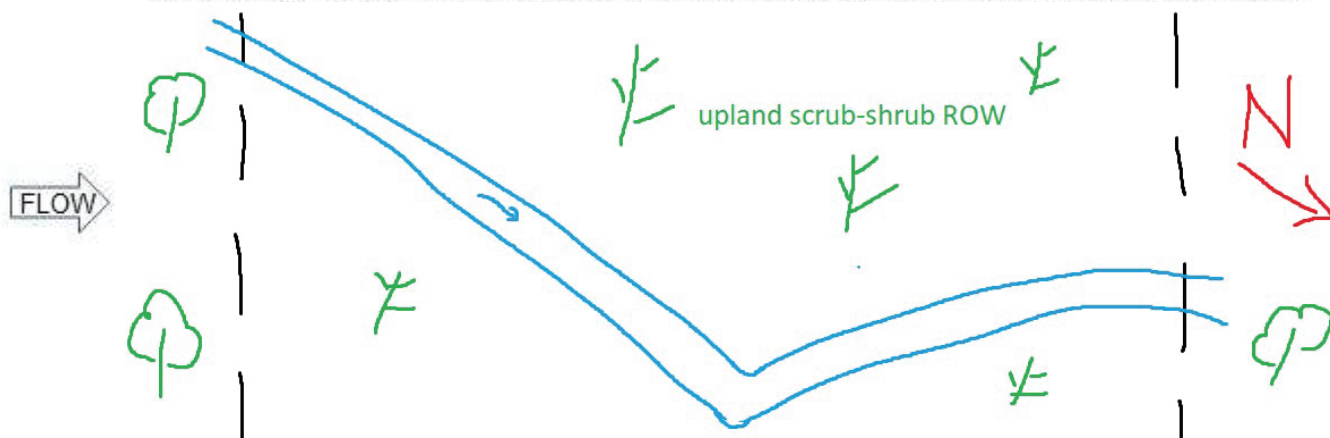
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

39

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-03**SITE NUMBER  RIVER BASIN **05060002** RIVER CODE  DRAINAGE AREA (mi<sup>2</sup>) **0.020**LENGTH OF STREAM REACH (ft) **200** LAT **39.02134** LONG **-83.01349** RIVER MILE DATE **01/20/2021** SCORER **BAO** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
Culverted and riparian cleared

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center;">19</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>20%</td></tr> <tr><td><input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>30%</td></tr> <tr><td><input checked="" type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>30%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	20%	<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	30%	<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	30%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> SILT [3 pt]</td><td>20%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> SILT [3 pt]	20%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>20%</b> (A) <b>15</b> (B) <b>4</b>	
TYPE	PERCENT																															
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<input type="checkbox"/> MUCK [0 pts]	0%																															
<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
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COMMENTS <input type="text"/> MAXIMUM POOL DEPTH (inches) <b>3.00</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width</b> Max=30  <div style="border: 1px solid black; padding: 5px; text-align: center;">5</div>																												
<table border="1"> <tbody> <tr><td><input type="checkbox"/> &gt; 4.0 meters (&gt; 13') [30 pts]</td><td><input type="checkbox"/> &gt; 1.0 m - 1.5 m (&gt; 3' 3" - 4' 8") [15 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 3.0 m - 4.0 m (&gt; 9' 7" - 13') [25 pts]</td><td><input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 1.5 m - 3.0 m (&gt; 4' 8" - 9' 7") [20 pts]</td><td></td></tr> </tbody> </table>					<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																							
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COMMENTS <input type="text"/> AVERAGE BANKFULL WIDTH (feet) <b>2.50</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS **Also within ROW**

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

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

COMMENTS 

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	--	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Little Beaver Creek	Distance from Evaluated Stream	0.83 mile
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: Piketon, OH NRCS Soil Map Page:        NRCS Soil Map Stream Order:         
County: Pike Township/City: Scioto Township

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 80%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

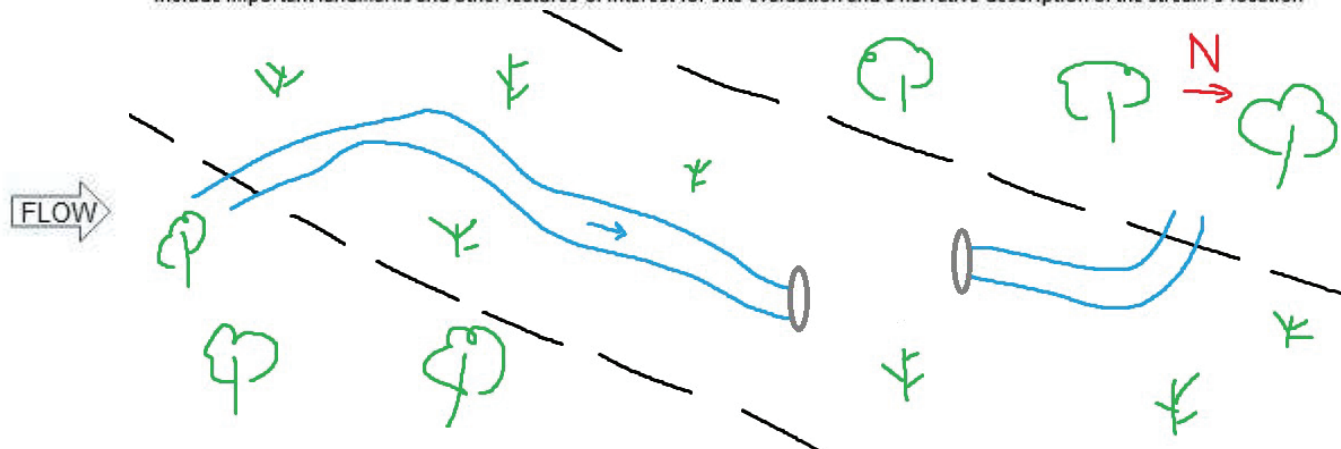
Salamanders Observed? (Y/N)  Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

17

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-04**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.001** DRAINAGE AREA (mi<sup>2</sup>) **0.001**LENGTH OF STREAM REACH (ft) **200** LAT **39.02073** LONG **-83.01389** RIVER MILE DATE **01/20/2021** SCORER **BAO, JFW** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
Cleared riparian, culverted

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">7</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>15%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	0%	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	0%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	15%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> SILT [3 pt]</td><td>15%</td></tr> <tr><td><input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>30%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>40%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> SILT [3 pt]	15%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	30%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	40%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%		
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Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>0%</b>		(A) <b>3</b>	(B) <b>4</b>																													
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COMMENTS <b></b> MAXIMUM POOL DEPTH (inches) <b>1.50</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width</b> Max=30  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">5</div>																												
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COMMENTS <b></b> AVERAGE BANKFULL WIDTH (feet) <b>2.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS 

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

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

COMMENTS **Intermittent**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 m/100 m)	<input checked="" type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	---	--	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Little Beaver Creek	Distance from Evaluated Stream	0.88 mile
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

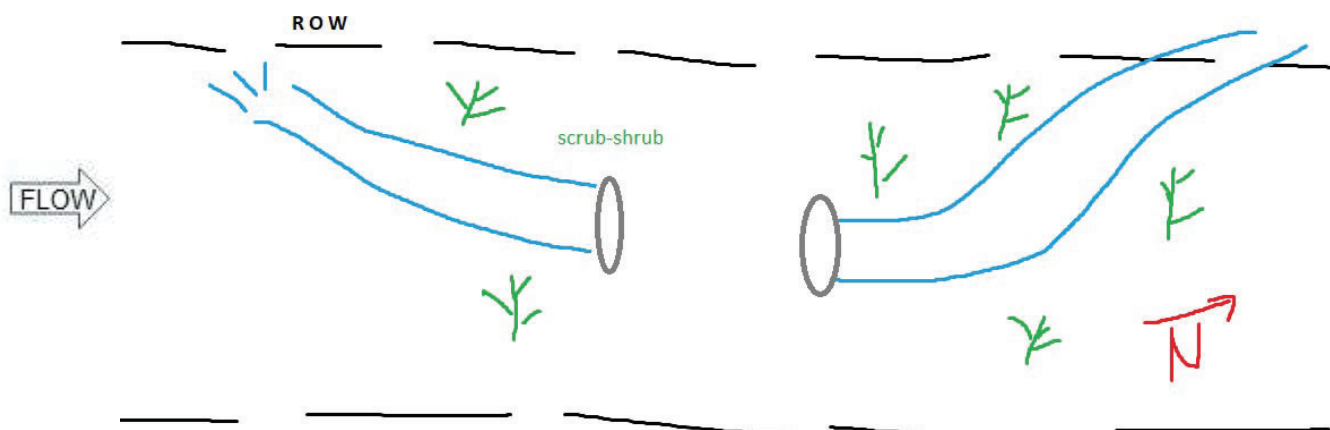
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

46

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-05**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.067**LENGTH OF STREAM REACH (ft) **77** LAT **39.01782** LONG **-83.02038** RIVER MILE **0.067**DATE **01/20/2021** SCORER **BAO** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY  
Culvert; 4wheel trails

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center;">16</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>20%</td></tr> <tr><td><input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>40%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>10%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	20%	<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	40%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	10%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input checked="" type="checkbox"/> SILT [3 pts]</td><td>30%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input checked="" type="checkbox"/> SILT [3 pts]	30%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>20%</b> (A) <b>12</b> (B) <b>4</b>	
TYPE	PERCENT																															
<input type="checkbox"/> BLDR SLABS [16 pts]	0%																															
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<input type="checkbox"/> MUCK [0 pts]	0%																															
<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12</b> <b>TOTAL NUMBER OF SUBSTRATE TYPES: 4</b>																																
<b>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</b>				<b>Pool Depth Max = 30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center;">25</div>																												
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COMMENTS <b>MAXIMUM POOL DEPTH (inches) 4.00</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center;">5</div>																												
<table border="1"> <tbody> <tr><td><input type="checkbox"/> &gt; 4.0 meters (&gt; 13') [30 pts]</td><td><input type="checkbox"/> &gt; 1.0 m - 1.5 m (&gt; 3' 3" - 4' 8") [15 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 3.0 m - 4.0 m (&gt; 9' 7" - 13') [25 pts]</td><td><input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 1.5 m - 3.0 m (&gt; 4' 8" - 9' 7") [20 pts]</td><td></td></tr> </tbody> </table>					<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																							
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COMMENTS <b>AVERAGE BANKFULL WIDTH (feet) 1.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

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

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

COMMENTS **Intermittent as confirmed by NHD**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	--	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 80%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
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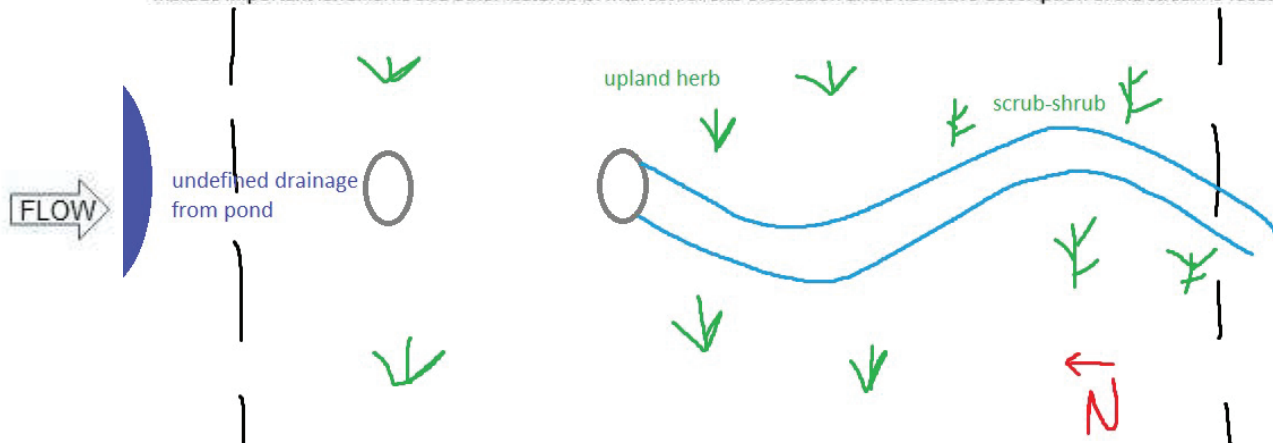
Salamanders Observed? (Y/N) ☒ N Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

16

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012021-06**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.020** DRAINAGE AREA (mi<sup>2</sup>) **0.020**LENGTH OF STREAM REACH (ft) **200** LAT **39.01786** LONG **-83.01771** RIVER MILE DATE **01/20/2021** SCORER **BAO, JFW** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Culverted; access road crosses

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">6</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>5%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	0%	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	5%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> SILT [3 pt]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>25%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>70%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> SILT [3 pt]	0%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	25%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	70%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>0%</b> (A) <b>3</b> (B) <b>3</b>	
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<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3</b> <b>TOTAL NUMBER OF SUBSTRATE TYPES: 3</b>																																
<b>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</b>				<b>Pool Depth Max = 30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">5</div>																												
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COMMENTS <b></b> MAXIMUM POOL DEPTH (inches) <b>1.00</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">5</div>																												
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COMMENTS <b></b> AVERAGE BANKFULL WIDTH (feet) <b>1.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input type="checkbox"/> Wide >10m	<input checked="" type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	<input type="checkbox"/> Narrow <5m	<input checked="" type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
		<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage
		<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
		<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS 

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 m/100 m)	<input checked="" type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	---	--	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 90%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

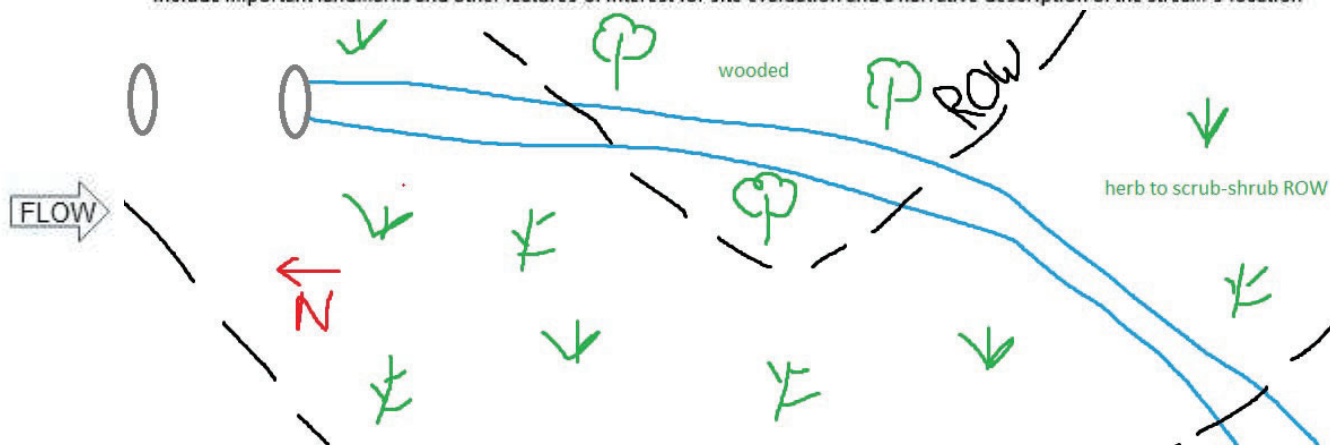
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

17

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012121-05**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0001** DRAINAGE AREA (mi<sup>2</sup>) **0.001**LENGTH OF STREAM REACH (ft) **49** LAT **39.01606** LONG **-83.01361** RIVER MILE **0.001**DATE **01/21/2021** SCORER **BAO** COMMENTS **Ephemeral but portion underground**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
Access road and soil disturbance throughout area

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">7</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>20%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	0%	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	20%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input checked="" type="checkbox"/> SILT [3 pt]</td><td>30%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>10%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>40%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input checked="" type="checkbox"/> SILT [3 pt]	30%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	40%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>0%</b> (A) <b>3</b> (B) <b>4</b>	
TYPE	PERCENT																															
<input type="checkbox"/> BLDR SLABS [16 pts]	0%																															
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<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3</b> <b>TOTAL NUMBER OF SUBSTRATE TYPES: 4</b>																																
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<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]																															
COMMENTS <b>MAXIMUM POOL DEPTH (inches) 1.50</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width</b> Max=30  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">5</div>																												
<table border="1"> <tbody> <tr><td><input type="checkbox"/> &gt; 4.0 meters (&gt; 13') [30 pts]</td><td><input type="checkbox"/> &gt; 1.0 m - 1.5 m (&gt; 3' 3" - 4' 8") [15 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 3.0 m - 4.0 m (&gt; 9' 7" - 13') [25 pts]</td><td><input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]</td></tr> <tr><td><input type="checkbox"/> &gt; 1.5 m - 3.0 m (&gt; 4' 8" - 9' 7") [20 pts]</td><td></td></tr> </tbody> </table>					<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																							
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COMMENTS <b>AVERAGE BANKFULL WIDTH (feet) 1.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

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

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

COMMENTS **Ephemeral with interstitial portion**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	--	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 60%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

## BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
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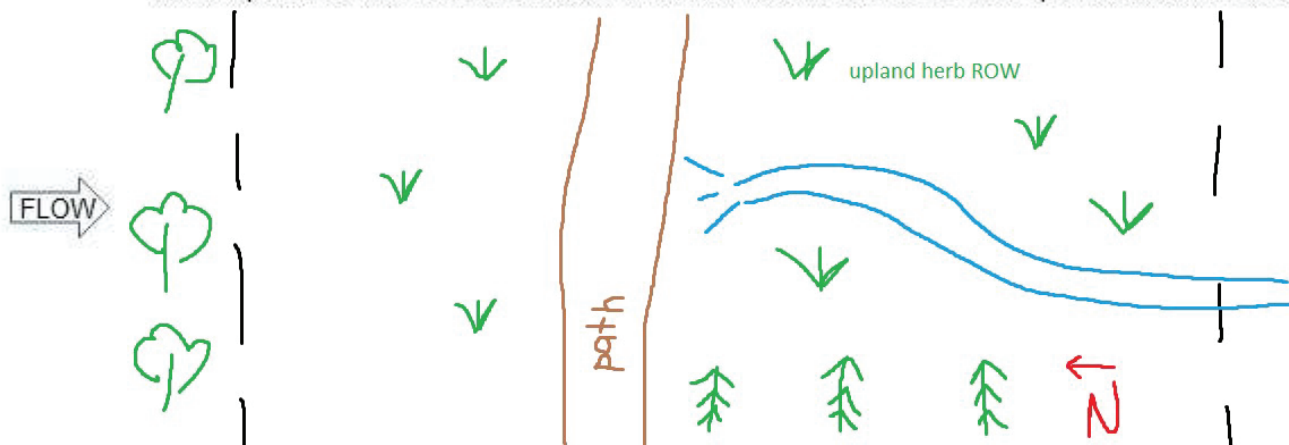
Salamanders Observed? (Y/N) N Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

20

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012121-02**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.001** DRAINAGE AREA (mi<sup>2</sup>) **0.001**LENGTH OF STREAM REACH (ft) **137** LAT **39.01602** LONG **-83.01001** RIVER MILE **0.001**DATE **01/21/2021** SCORER **JFW** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Upper riparian mowed

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">10</div> A + B																												
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<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
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COMMENTS <b>_____</b> MAXIMUM POOL DEPTH (inches) <b>1.00</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">5</div>																												
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COMMENTS <b>_____</b> AVERAGE BANKFULL WIDTH (feet) <b>1.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input checked="" type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input checked="" type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS **\_\_\_\_\_**

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input checked="" type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	--	---	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Big Run	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name:  NRCS Soil Map Page:  NRCS Soil Map Stream Order:   
County:  Township/City:

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

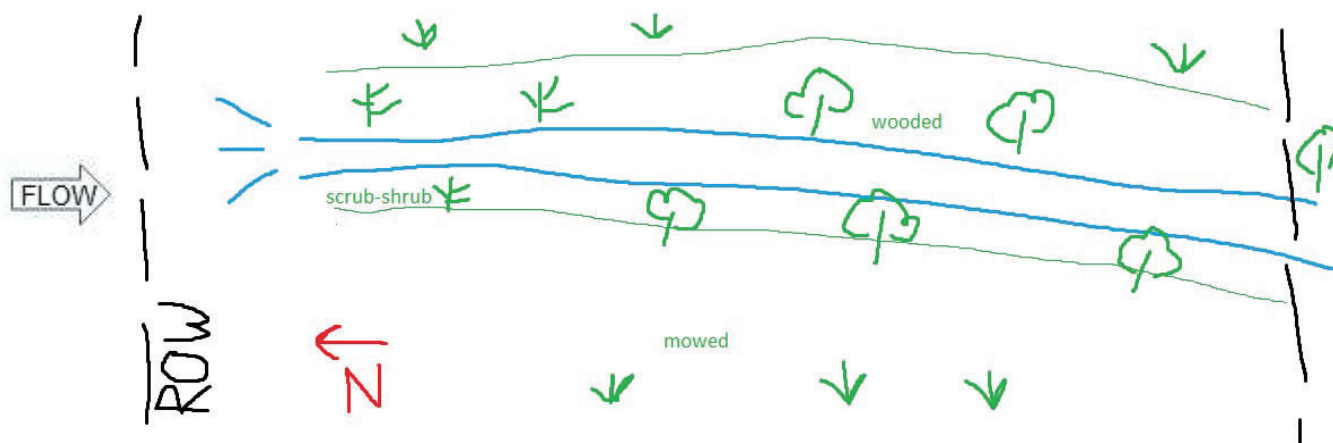
Salamanders Observed? (Y/N) ☐ N Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

39

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012121-03**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.020** DRAINAGE AREA (mi<sup>2</sup>) **0.020**LENGTH OF STREAM REACH (ft) **200** LAT **39.01578** LONG **-83.00876** RIVER MILE DATE **01/21/2021** SCORER **BAO** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY Channelization

1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A &amp; B

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pts]	10%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	25%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	35%	<input type="checkbox"/> MUCK [0 pts]	0%
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	30%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **25%**(A) **15**(B) **4**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** TOTAL NUMBER OF SUBSTRATE TYPES: **4**HHEI  
Metric  
PointsSubstrate  
Max = 40

19

A + B

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

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

COMMENTS  MAXIMUM POOL DEPTH (inches) **3.00**Pool Depth  
Max = 30

15

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

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

COMMENTS  AVERAGE BANKFULL WIDTH (feet) **3.00**Bankfull  
Width  
Max=30

5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Conservation Tillage
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field	<input type="checkbox"/> Urban or Industrial
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Mining or Construction

COMMENTS 

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

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

COMMENTS 

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

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

STREAM GRADIENT ESTIMATE

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



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
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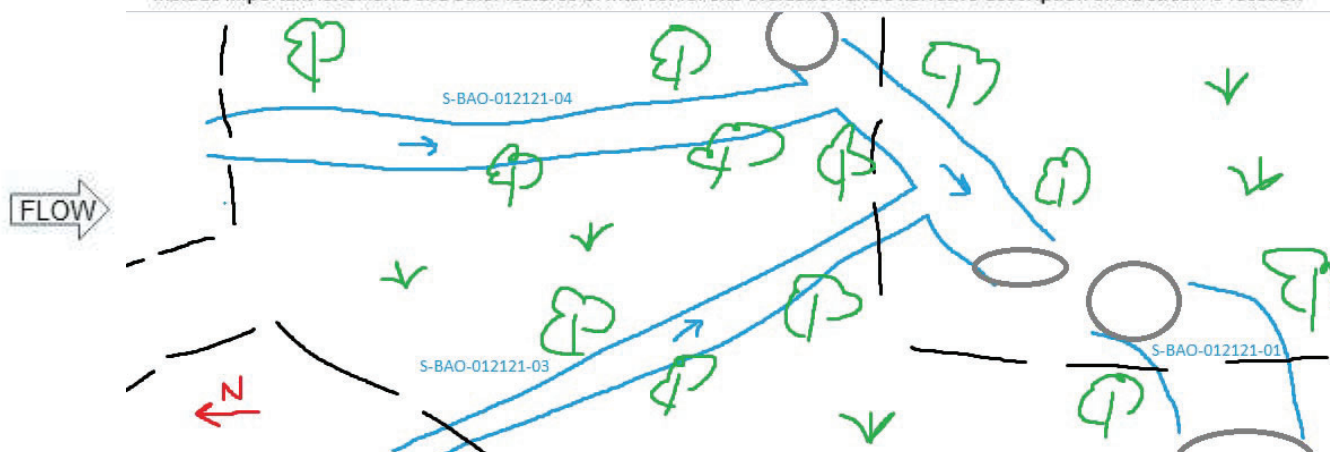
Salamanders Observed? (Y/N) N Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

28

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012121-04**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0001** DRAINAGE AREA (mi<sup>2</sup>) **0.001**LENGTH OF STREAM REACH (ft) **190** LAT **39.01578** LONG **-83.00865** RIVER MILE **0.001**DATE **01/21/2021** SCORER **JFW** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Upper riparian mowed

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center;">18</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>10%</td></tr> <tr><td><input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>30%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>10%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	10%	<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	30%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	10%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input checked="" type="checkbox"/> SILT [3 pt]</td><td>30%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>10%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>10%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>0%</td></tr> </tbody> </table>	TYPE	PERCENT	<input checked="" type="checkbox"/> SILT [3 pt]	30%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	10%	<input type="checkbox"/> MUCK [0 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>10%</b> (A) <b>12</b> (B) <b>6</b>	
TYPE	PERCENT																															
<input type="checkbox"/> BLDR SLABS [16 pts]	0%																															
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<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: <b>12</b> TOTAL NUMBER OF SUBSTRATE TYPES: <b>6</b>																																
<b>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</b>				<b>Pool Depth</b> Max = 30  <div style="border: 1px solid black; padding: 5px; text-align: center;">5</div>																												
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COMMENTS <b>1.00</b> MAXIMUM POOL DEPTH (inches)																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width</b> Max=30  <div style="border: 1px solid black; padding: 5px; text-align: center;">5</div>																												
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<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																																
COMMENTS <b>2.00</b> AVERAGE BANKFULL WIDTH (feet)																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input checked="" type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input checked="" type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage
		<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
		<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	---	--	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Big Run	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

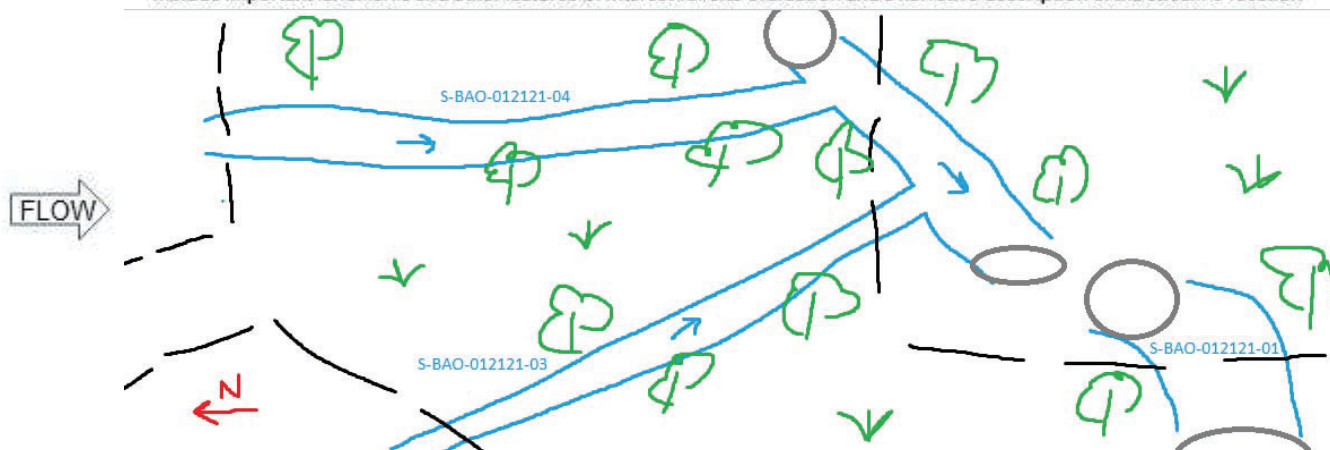
Salamanders Observed? (Y/N)  Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

54

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012121-01**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0060** DRAINAGE AREA (mi<sup>2</sup>) **0.060**LENGTH OF STREAM REACH (ft) **50** LAT **39.01574** LONG **-83.00873** RIVER MILE **0.060**DATE **01/21/2021** SCORER **BAO** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
Culverts, channelization, and artificial substrate

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">9</div> A + B																												
<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> COBBLE (85-256 mm) [12 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td>10%</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		0%	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	0%	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	0%	<input type="checkbox"/> SAND (<2 mm) [6 pts]	10%	<table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr><td><input checked="" type="checkbox"/> SILT [3 pts]</td><td>20%</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> FINE DETRITUS [3 pts]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>0%</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>0%</td></tr> <tr><td><input checked="" type="checkbox"/> ARTIFICIAL [3 pts]</td><td>70%</td></tr> </tbody> </table>	TYPE	PERCENT	<input checked="" type="checkbox"/> SILT [3 pts]	20%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%	<input type="checkbox"/> MUCK [0 pts]	0%	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	70%		
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<input type="checkbox"/> MUCK [0 pts]	0%																															
<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	70%																															
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <b>0%</b>		(A) <b>6</b>	(B) <b>3</b>																													
<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:</b>																																
<b>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</b>				<b>Pool Depth Max = 30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">25</div>																												
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COMMENTS <b>Culvert plunge pools throughout were not considered</b>				<b>MAXIMUM POOL DEPTH (inches)</b> <b>4.00</b>																												
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24px;">20</div>																												
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COMMENTS <b>AVERAGE BANKFULL WIDTH (feet)</b> <b>5.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input checked="" type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input checked="" type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
		<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage
		<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
		<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input checked="" type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 m/100 m)
---	--	---	---	--



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) **N** Species observed (if known):

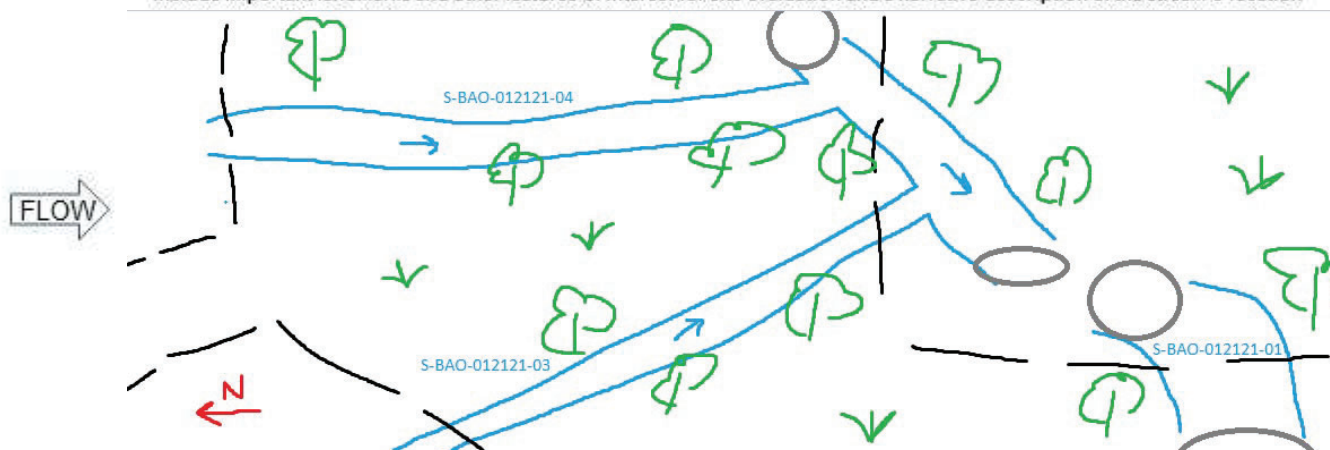
Salamanders Observed? (Y/N)  Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

71

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012221-01**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.020** DRAINAGE AREA (mi<sup>2</sup>) **0.020**LENGTH OF STREAM REACH (ft) **200** LAT **39.01444** LONG **-83.01204** RIVER MILE DATE **01/22/2021** SCORER **BAO** COMMENTS **Ephemeral; high gradient**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Stream begins definition at culvert; high gradient

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 24pt;">31</div> A + B																												
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COMMENTS <b></b> AVERAGE BANKFULL WIDTH (feet) <b>4.00</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS 

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

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

COMMENTS **Ephemeral**

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 m)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 m/100 m)	<input type="checkbox"/> Moderate to Severe	<input checked="" type="checkbox"/> Severe (10 m/100 m)
---	---	---	---	---



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: **Piketon, OH** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**  
County: **Pike** Township/City: **Scioto Township**

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
-----------------------------------	---	------------------------------

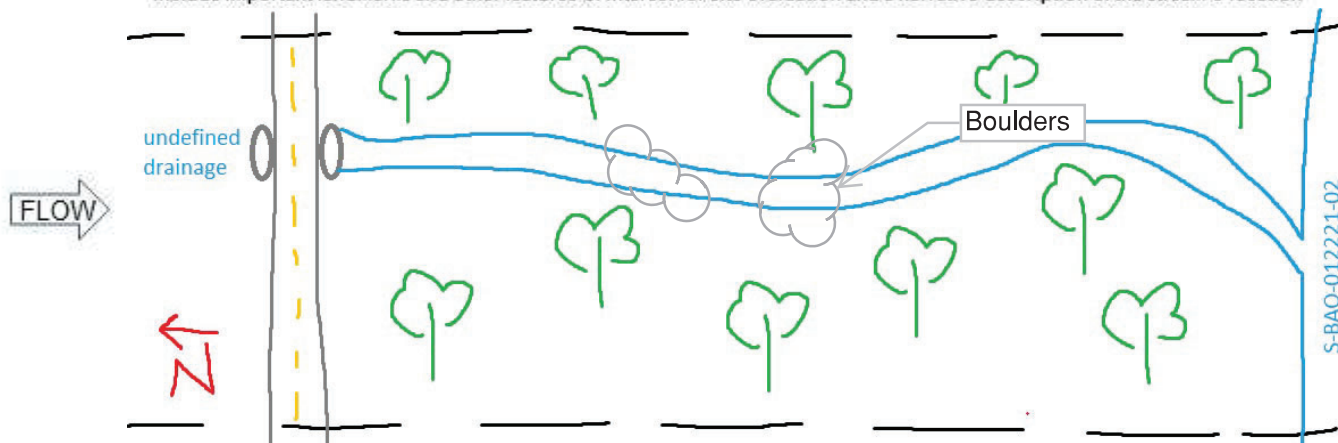
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N)  Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

77

SITE NAME/LOCATION **AEP Arboles Station and Transmission Lines Project, S-BAO-012221-02**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0590** DRAINAGE AREA (mi<sup>2</sup>) **0.590**LENGTH OF STREAM REACH (ft) **200** LAT **39.01359** LONG **-83.01251** RIVER MILE **0.590**DATE **01/22/2021** SCORER **BAO, JFW** COMMENTS **Perennial**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Culverted at head

<b>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.</b> (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; text-align: center;">27</div> A + B																												
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TYPE	PERCENT																															
<input type="checkbox"/> BLDR SLABS [16 pts]	10%																															
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<input type="checkbox"/> ARTIFICIAL [3 pts]	0%																															
<b>2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</b>				<b>Pool Depth</b> Max = 30  <div style="border: 1px solid black; padding: 5px; text-align: center;">20</div>																												
<table border="1"> <tbody> <tr> <td><input checked="" type="checkbox"/> &gt; 30 centimeters [20 pts]</td> <td><input type="checkbox"/> 5 cm - 10 cm [15 pts]</td> </tr> <tr> <td><input type="checkbox"/> 22.5 - 30 cm [30 pts]</td> <td><input type="checkbox"/> &lt; 5 cm [5pts]</td> </tr> <tr> <td><input type="checkbox"/> &gt; 10 - 22.5 cm [25 pts]</td> <td><input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]</td> </tr> </tbody> </table>					<input checked="" type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> 5 cm - 10 cm [15 pts]	<input type="checkbox"/> 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5pts]	<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]																						
<input checked="" type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> 5 cm - 10 cm [15 pts]																															
<input type="checkbox"/> 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5pts]																															
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]																															
COMMENTS <b>MAXIMUM POOL DEPTH (inches)</b> <b>12</b>																																
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):</b>				<b>Bankfull Width</b> Max=30  <div style="border: 1px solid black; padding: 5px; text-align: center;">30</div>																												
<table border="1"> <tbody> <tr> <td><input checked="" type="checkbox"/> &gt; 4.0 meters (&gt; 13') [30 pts]</td> <td><input type="checkbox"/> &gt; 1.0 m - 1.5 m (&gt; 3' 3" - 4' 8") [15 pts]</td> </tr> <tr> <td><input type="checkbox"/> &gt; 3.0 m - 4.0 m (&gt; 9' 7" - 13') [25 pts]</td> <td><input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]</td> </tr> <tr> <td><input type="checkbox"/> &gt; 1.5 m - 3.0 m (&gt; 4' 8" - 9' 7") [20 pts]</td> <td></td> </tr> </tbody> </table>					<input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																							
<input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]																															
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]																															
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]																																
COMMENTS <b>AVERAGE BANKFULL WIDTH (feet)</b> <b>15</b>																																

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wide >10m		Mature Forest, Wetland	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture	Mining or Construction

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input checked="" type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
---	--	---	---	--



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

QHEI PERFORMED? ☒ Yes ☐ No QHEI Score 59.50 (If Yes, Attach Completed QHEI form)

**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Scioto River Distance from Evaluated Stream >2 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: Piketon, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Pike Township/City: Scioto Township

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/16/21 Quantity: 0.20  
Photo-documentation Notes: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (umhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_  
\_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_  
\_\_\_\_\_

**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

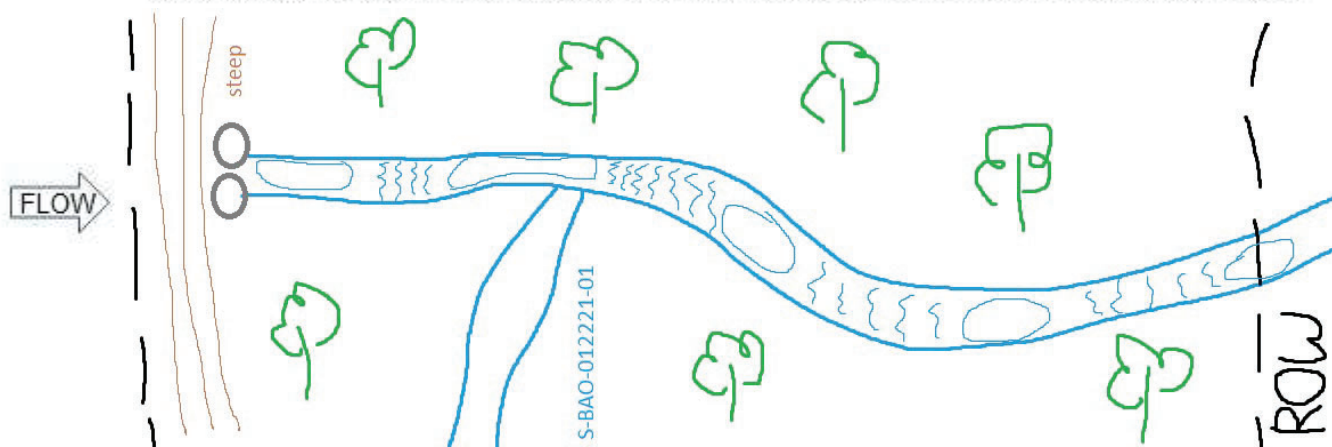
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_  
\_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

76

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012221-03**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.220** DRAINAGE AREA (mi<sup>2</sup>) **0.220**LENGTH OF STREAM REACH (ft) **200** LAT **39.01161** LONG **-83.01267** RIVER MILE DATE **01/22/2021** SCORER **JFW** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Culverted and formerly channelized1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.  
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pts]	10%
<input checked="" type="checkbox"/> BOULDER (>256 mm) [16 pts]	25%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input type="checkbox"/> BEDROCK [16 pts]	15%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	15%	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	25%	<input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	10%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **50%**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) **25** TOTAL NUMBER OF SUBSTRATE TYPES: (B) **6**HHEI  
Metric  
PointsSubstrate  
Max = 40

31

A + B

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

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

COMMENTS  MAXIMUM POOL DEPTH (inches) **6.00**Pool Depth  
Max = 30

25

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

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

COMMENTS  AVERAGE BANKFULL WIDTH (feet) **8**Bankfull  
Width  
Max=30

20

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field	<input type="checkbox"/> Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Mining or Construction

COMMENTS 

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

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

COMMENTS **Intermittent**

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

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

STREAM GRADIENT ESTIMATE

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



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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI form)

## DOWNSTREAM DESIGNATED USE(S)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: Piketon, OH NRCS Soil Map Page:        NRCS Soil Map Stream Order:         
County: Pike Township/City: Scioto Township

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: Orange film on substrate

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	Y	Species observed (if known):
-----------------------------------	---	------------------------------

Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

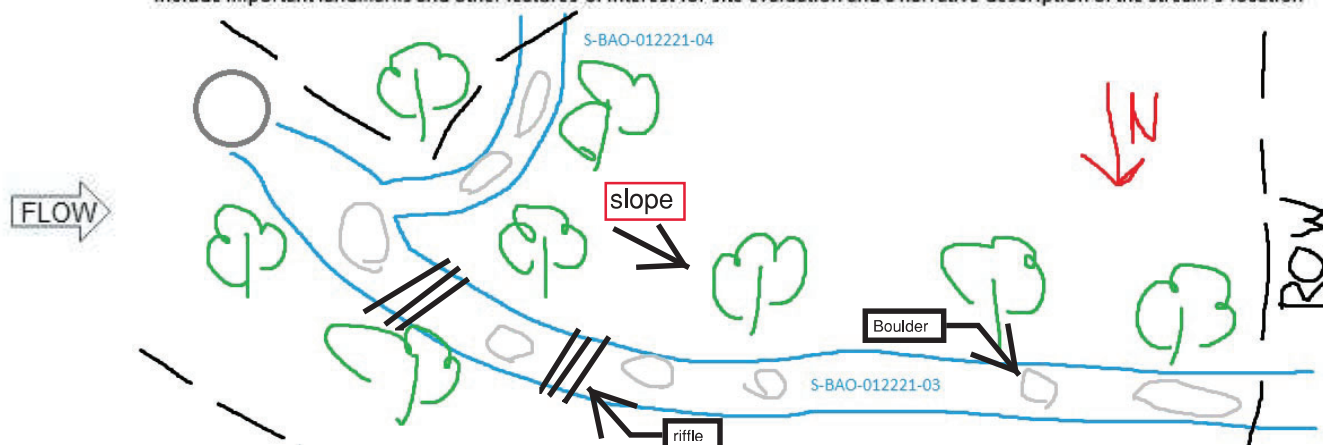
Aquatic Macroinvertebrates Observed? (Y/N) ☐ N Species observed (if known):

Comments Regarding Biology:

One gray spotted frog observed

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

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





## Primary Headwater Habitat Field Evaluation Form

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

61

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012221-04**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0062** DRAINAGE AREA (mi<sup>2</sup>) **0.062**LENGTH OF STREAM REACH (ft) **72** LAT **39.01096** LONG **-83.01204** RIVER MILE **0.062**DATE **01/22/2021** SCORER **JFW** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
Channelization from historic roadway construction1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.  
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pts]	5%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	5%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input checked="" type="checkbox"/> BEDROCK [16 pts]	50%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	5%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	30%	<input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	5%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **60%**(A) **25**(B) **6**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **25** TOTAL NUMBER OF SUBSTRATE TYPES: **6**HHEI  
Metric  
PointsSubstrate  
Max = 40

31

A + B

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

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

COMMENTS **3.00** MAXIMUM POOL DEPTH (inches)Pool Depth  
Max = 30

15

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

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

COMMENTS **4.00** AVERAGE BANKFULL WIDTH (feet)Bankfull  
Width  
Max=30

15

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Immature Forest, Shrub or Old Field	<input type="checkbox"/> Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Mining or Construction

COMMENTS

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

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

COMMENTS **Intermittent**

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

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

STREAM GRADIENT ESTIMATE

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



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: Piketon, OH NRCS Soil Map Page:        NRCS Soil Map Stream Order:         
County: Pike Township/City: Scioto Township

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)	N	Species observed (if known):
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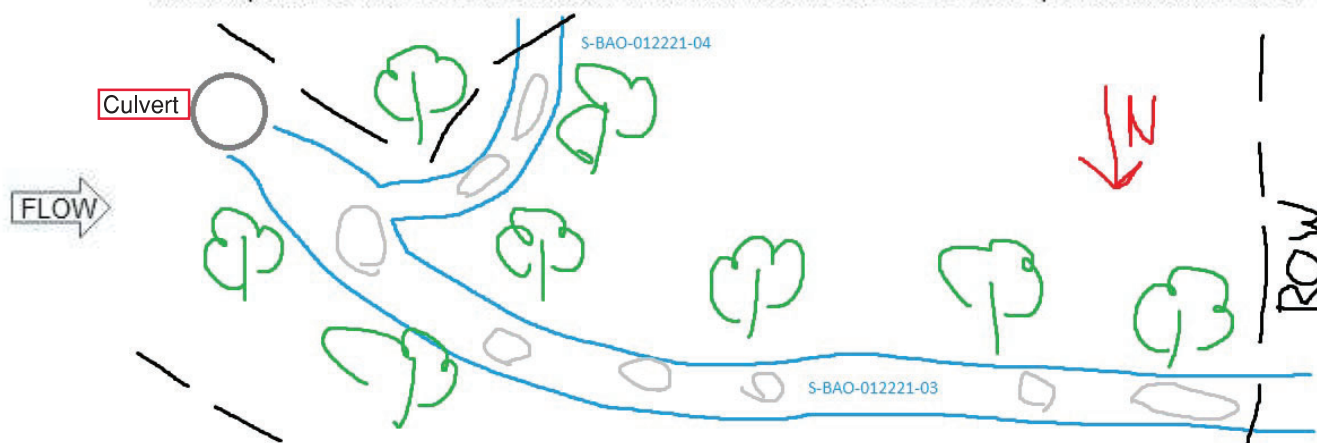
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_

Aquatic Macroinvertebrates Observed? (Y/N) ☐ N Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





## Primary Headwater Habitat Field Evaluation Form

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

29

SITE NAME/LOCATION **Arboles Station and Transmission Lines Project, S-BAO-012221-05**SITE NUMBER **05060002** RIVER BASIN **05060002** RIVER CODE **0.038** DRAINAGE AREA (mi<sup>2</sup>)LENGTH OF STREAM REACH (ft) **199** LAT **39.00896** LONG **-83.01198** RIVER MILEDATE **01/22/2021** SCORER **BAO** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
Channelization and culvert1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.  
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pts]	20%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input type="checkbox"/> BEDROCK [16 pts]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (85-256 mm) [12 pts]	10%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	40%	<input type="checkbox"/> MUCK [0 pts]	0%
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	30%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **10%**(A) **15**(B) **4**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI  
Metric  
PointsSubstrate  
Max = 40

19

A + B

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

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

COMMENTS

MAXIMUM POOL DEPTH (inches)

1.50

Pool Depth  
Max = 30

5

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

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

COMMENTS

AVERAGE BANKFULL WIDTH (feet)

2.00

Bankfull  
Width  
Max=30

5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field	<input type="checkbox"/> Urban or Industrial
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Mining or Construction

COMMENTS

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

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

COMMENTS **Intermittent**

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

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

STREAM GRADIENT ESTIMATE

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



**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)

<input checked="" type="checkbox"/> WWH Name:	Scioto River	Distance from Evaluated Stream	>2 miles
<input type="checkbox"/> CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/> EWH Name:		Distance from Evaluated Stream	

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

USGS Quadrangle Name: Piketon, OH NRCS Soil Map Page:        NRCS Soil Map Stream Order:         
County: Pike Township/City: Scioto Township

## MISCELLANEOUS

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photo-documentation Notes:

Elevated Turbidity?(Y/N): **N** Canopy (% open): **20%**

Were samples collected for water chemistry? (Y/N):  Lab Sample # or ID (attach results):

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

Is the sampling reach representative of the stream (Y/N) ☒ Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) **N** Species observed (if known):

Frogs or Tadpoles Observed? (Y/N)  Species observed (if known):

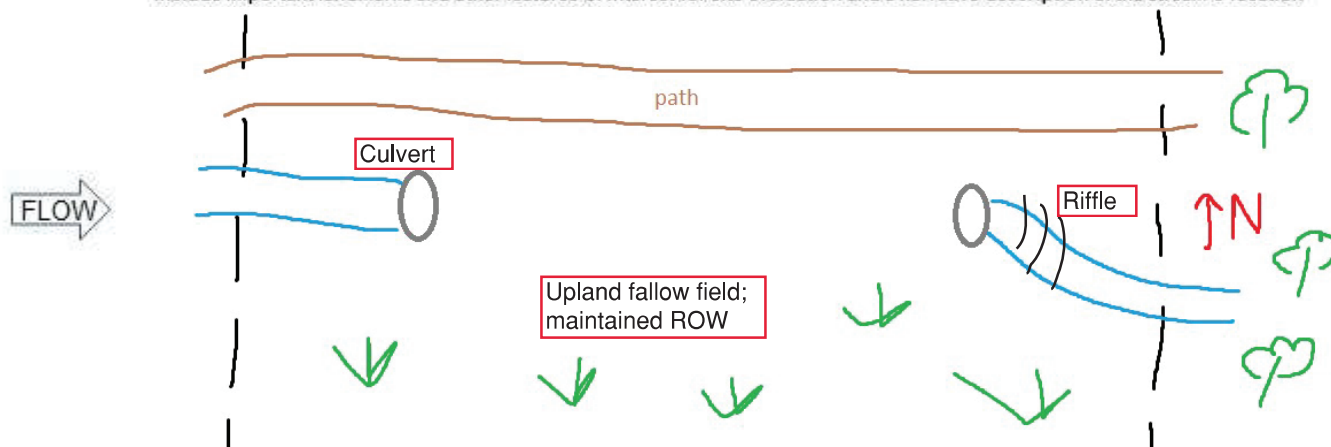
Salamanders Observed? (Y/N)  Species observed (if known):

Aquatic Macroinvertebrates Observed? (Y/N) ☒ N Species observed (if known):

Comments Regarding Biology: \_\_\_\_\_

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

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





**Appendix E**  
**Jacobs Open Water/Pond Data Forms**

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## POND DATA SHEET

Pond AS-001		Wetland AS-006 (W-BAO-012121-04),	
<b>FEATURE ID:</b> (P-BAO-012121-01)		<b>ASSOCIATED FEATURES:</b> Stream AS-011 (S-BAO-012121-01),	
SURVEY TYPE: Wetland and waterbodies delineation		Stream AS-013 (S-BAO-012221-02)	
<b>DATE:</b> 01/21/2021		<b>CLIENT/PROJECT NAME:</b> AEP Arboles Station and Transmission Lines	
<b>INVESTIGATORS:</b> Ben Otto/Jen Wessel		<b>ROUTE:</b> Existing Centerline	
<b>STATE/COUNTY:</b> Ohio/Pike County		<b>IS THIS A MAPPED NWI FEATURE?:</b> No	
WATERBODY CHARACTERISTICS			
<b>WATERBODY TYPE:</b>	Pond		
<b>AVG. DEPTH:</b>	24"		
<b>AVG. WIDTH (WATER SURFACE):</b>	100'		
<b>APPROXIMATE SIZE:</b>	0.21 acres in survey corridor, extends beyond western boundary of survey corridor.		
QUALITATIVE ATTRIBUTES			
<b>AVERAGE WATER APPEARANCE:</b>	Cloudy brown-green		
<b>PRIMARY SUBSTRATE (IF OBSERVED):</b>	Silt		
<b>POTENTIAL HABITAT FOR:</b>	Amphibians		
<b>SURROUNDING LAND USE:</b>	Mowed commercial lawn		
<b>WETLAND FRINGE (IF PRESENT):</b>	N/A		
COMMENTS			
Retention pond fed by Wetland AS-006 and Stream AS-011. Monk overflow outlet leads to culvert at head of Stream AS-013.			

## **Appendix F**

### **Representative Photographs**

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Upstream



Downstream



Substrate





Upstream



Downstream



Substrate





Upstream



Downstream



Substrate





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Downstream



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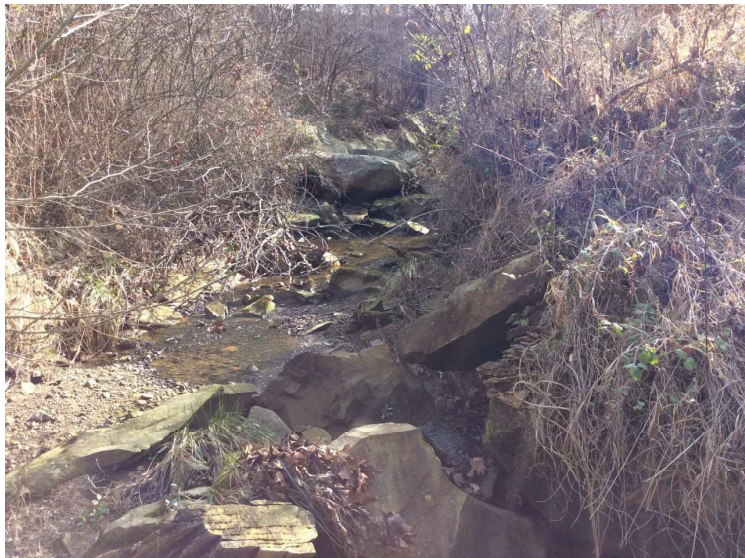


Downstream



Substrate





Upstream



Downstream



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Substrate



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**Appendix G**  
**Documentation for State- and Federally Listed Species**

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## Otto, Ben/CIN

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**From:** Ohio, FW3 <ohio@fws.gov>  
**Sent:** Monday, March 22, 2021 10:43 AM  
**To:** Otto, Ben/CIN; Grant S Stuller  
**Cc:** nathan.reardon@dnr.state.oh.us; Parsons, Kate  
**Subject:** [EXTERNAL] AEP - Arboles Station Transmission Lines Project in Scioto Township, Pike County, 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# 03E15000-2021-TA-1017

Dear Mr. Otto,

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$  inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

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

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

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

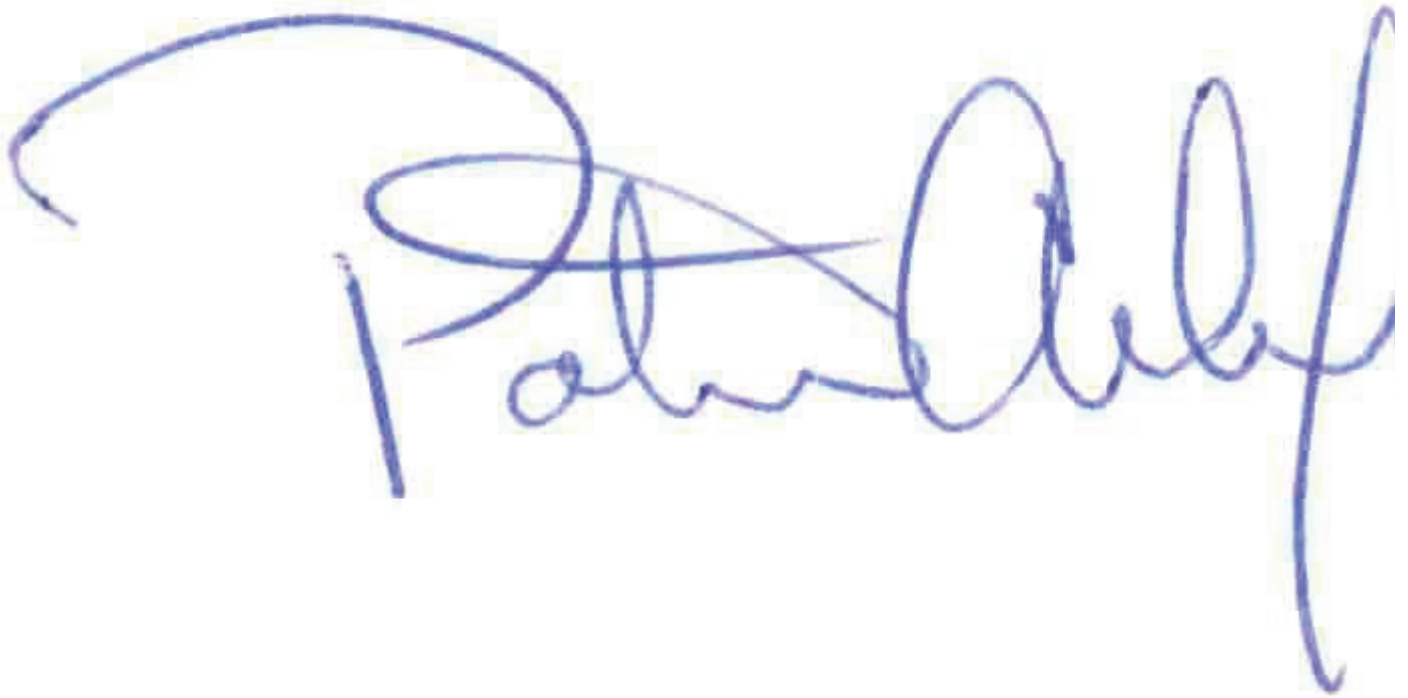
Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical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

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

Sincerely,



A handwritten signature in blue ink, appearing to read "Patrice Ashfield". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Patrice Ashfield  
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW  
Kate Parsons, ODNR-DOW



# 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

May 6, 2021

Ben Otto  
2 Crowne Point Court  
Suite 100  
Cincinnati, Ohio 45241

**Re:** 21-0342; AEP Arboles Station and Associated Transmission Lines Project

**Project:** The proposed project includes the construction of five 138 kilovolt (kV) transmission lines, the removal of approximately 0.8-mile of existing 100-foot 138 kV transmission line right-of-way (ROW,) rebuilding approximately 0.4- mile of existing 100-foot 138 kV line ROW, and the construction of the Arboles substation.

**Location:** The proposed project is located in Scioto Township, Pike County Ohio.

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

**Natural Heritage Database:** The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH  $\geq 20$  if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the “OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING”. <https://ohiodnr.gov/static/documents/wildlife/wildlife-management/Bat+Survey+Guidelines.pdf>

If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, [sarah.stankavich@dnr.state.oh](mailto:sarah.stankavich@dnr.state.oh)).

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS “Range-wide Indiana Bat Survey Guidelines.” If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species. The project is within the range of the following listed mussel species:

#### Federally Endangered

clubshell (*Pleurobema clava*)

Northern riffleshell (*Epioblasma torulosa rangiana*)

rayed bean (*Villosa fabalis*)

#### State Endangered

Ohio pigtoe (*Pleurobema cordatum*)

washboard (*Megaloniaias nervosa*)

yellow sandshell (*Lampsilis teres*)

#### State Threatened

black sandshell (*Ligumia recta*)

fawnsfoot (*Truncilla donaciformis*)

threehorn wartyback (*Obliquaria reflexa*)



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

The project is within the range of the following listed fish species:

State Endangered

bigeye shiner (*Notropis boops*)  
goldeye (*Hiodon alosoides*),  
popeye shiner (*Notropis ariommus*),  
shoal chub (*Macrhybopsis hyostoma*),  
shortnose gar (*Lepisosteus platostomus*),  
shovelnose sturgeon (*Scaphirhynchus platyrhynchus*),

State Threatened

blue sucker (*Cycleptus elongatus*),  
channel darter (*Percina copelandi*),  
paddlefish (*Polyodon spathula*)  
river darter (*Percina shumardi*),  
Tippecanoe darter (*Etheostoma tippecanoe*)

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

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

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

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

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](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or [Sarah.Tebbe@dnr.state.oh.us](mailto:Sarah.Tebbe@dnr.state.oh.us) if you have questions about these comments or need additional information.

Mike Pettegrew  
Environmental Services Administrator (Acting)

**This foregoing document was electronically filed with the Public Utilities  
Commission of Ohio Docketing Information System on**

**12/13/2021 2:13:51 PM**

**in**

**Case No(s). 21-1084-EL-BLN**

Summary: Notice Letter of Notification Part 2 electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.